

ANNUAL REPORT 2018



ERCIS

European
Research
Center for
Information
Systems



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ERCIS – the European Research Center for Information Systems – is an international network of scientists conducting cooperative research in the field of Information Systems (IS). The Network was founded in 2004 at the University of Münster and is funded by the German State of North Rhine-Westphalia and the University of Münster.

The Network provides new ways of thinking and multi-disciplinary approaches for finding solutions to the problems arising from an ongoing transformation of society and organisations due to the growing impact of IT. ERCIS has dedicated itself to dealing with these challenges through collaboration and exchange of information between research and practice.

ERCIS is notable for excellent communication and uncomplicated initiation of research cooperation and research projects. Among ERCIS’ associated major strengths are the personal contacts between researchers, which make it a vibrant network. ERCIS covers a wide range of disciplines associated with IS and perspectives on IS research.

The Network is headed by the **Board of Directors** in Münster, which is composed of one academic director, namely Prof. Dr. Jörg Becker, and eight additional professors all active in the IS research field. Moreover, ERCIS involves numerous internationally renowned researchers from more than 20 **Associated Research Institutions, Personal Members**, as well as members of the **Advisory Board** coming from diverse industry companies.

All ERCIS research partners are experts in a wide variety of disciplines related to IS. Research conducted by ERCIS ranges from fundamental research to application-oriented research. Besides individual research activities of ERCIS members, the Network brings together and supports selected research aspects of IS in **Competence Centres** aimed at strengthening research in specific areas. The Advisory Board members come from various industry sectors, which guarantees that the research conducted at ERCIS is relevant for practice. Regular meetings of the Board of Directors with the Advisory Board members, as well as annual workshops of ERCIS’ associated research institutions, ensure continuous, direct and productive exchange of knowledge.

Finally, students and young researchers also benefit from collaboration at ERCIS, as many ERCIS research partners offer exchange programs that last one or two semesters, which gives students an opportunity to acquire international experience. Joint lectures and guest talks organised by several ERCIS members contribute to the internationalisation of teaching.

If you are interested in connecting with the Network, please feel free to contact us! For further information please visit

www.ercis.org

DEAR FELLOW ERCIS PARTNERS AND INTERESTED READERS OF THIS REPORT,

It has – again – been an exciting year for our ERCIS network! A lot has happened: Established projects continued and new projects were successfully applied for and started this year. Researcher exchanges happened between ERCIS partner institutions, we welcomed new personal members and much more. Have a look at this year’s Annual Report and read for yourself!

The Master’s Programme Public Sector Innovation and E-Governance (PIONEER) of the Universities of Tallinn, Leuven, and Münster runs really well and we could already kick-off the 2nd cohort recently in Leuven. Within the RISE_BPM project, we still send researchers around the world for research stays and I have to admit that I sometimes lose track of where my research assistants are certain points in time. They visit ERCIS partner institutions, establish new connections, and really spread the ERCIS network spirit. The Universities of Liechtenstein, Galway and Münster kicked off a new Erasmus+ funded project on text mining in the context of curricula design this year. The Erasmus+ funded project MASTIS that involves numerous ERCIS partners just received a one year extension to thoroughly implement an IS Master cur-

riculum in the Ukraine and Montenegro. From my perspective, it is great to see that so many ERCIS institutions work together on so many different topics and projects.

Talking about ERCIS members: As announced last year, Chris Holland left the University of Manchester and joined Loughborough University this year. He was eager to make Loughborough University the new ERCIS partner institution in the UK and the board of directors had absolutely no objections against this change of affiliation. Thus, we officially welcome Loughborough University as new ERCIS partner institution! In addition, we also welcome three new personal members, namely Jens Pöppelbuss, Christian Meske, and Marco de Marco. Great to have you on board! On the other hand, Klaus Backhaus, ERCIS director from the very first hour, and now professor emeritus, retires from his position as ERCIS director. I personally thank Klaus for all his support over the last years and hope that we still keep contact within the network! Besides the membership changes, we also had a lot of movement in the network through partner visits and researcher exchanges over the last year, not only within the RISE_BPM project. I really

cannot mention all of the stays but I would invite you to have a look at the network research activities section for detailed information about who went where and why. As you see, a network keeps changing and moving and I look forward to new developments in the upcoming year.

Finally, I want to thank Tero Päiväranta for hosting this year’s Annual Workshop at the University of Lulea in Sweden. It is always great to come to Lulea, summertime and wintertime, and we really enjoyed the meeting up in the north of Europe. Next year, we will take the chance to get to know Loughborough University better as Peter Kawalek and Chris Holland invited us to visit the UK for the Annual Workshop 2019.

Looking back at 2018, I am proud to see so many different activities that were possible because of all of us being members and contributing to the ERCIS network. It truly is “ERCIS – it’s what we make of it!”

All the best,

Jörg Becker

TABLE OF CONTENTS

ERCIS NETWORK	2
PREFACE	3
9TH ANNUAL ERCIS WORKSHOP IN LULEÅ	6
SHORT NEWS	8
UNIVERSITY OF MÜNSTER – GERMANY (HEADQUARTERS)	12
Chair for Information Systems and Information Management	12
Institute of Medical Informatics	14
Chair for Information Systems and Logistics	16
Institute for Information, Telecommunication and Media Law (ITM)	18
Chair for IS and Interorganizational Systems	20
Chair of Practical Computer Science	22
Information Systems and Statistics	24
Chair of Computer Science – DBIS Group	26
INTERNATIONAL PARTNER INSTITUTIONS	28
AUSTRIA – VIENNA	28
Vienna University of Economics and Business	
BELGIUM – LEUVEN	30
KU Leuven	
CZECH REPUBLIC – PRAGUE	34
Charles University in Prague	
DENMARK – COPENHAGEN	36
Copenhagen Business School	
ESTONIA – TALLINN	38
Tallinn University of Technology	
FINLAND – TURKU	40
University of Turku	
FRANCE – TALENCE	42
Kedge Business School	
IRELAND – GALWAY	44
National University of Ireland Galway	
ITALY – ROMA	46
Luiss Guido Carli University	
PRINCIPALITY OF LIECHTENSTEIN – VADUZ	48
University of Liechtenstein	

LITHUANIA – KAUNAS	50
Kaunas University of Technology	
NEW ZEALAND – HAMILTON	52
University of Waikato	
NORWAY – KRISTIANSAND	54
University of Agder	
POLAND – SOPOT	56
University of Gdansk	
POLAND – WROCLAW	58
Wroclaw University of Science and Technology	
PORTUGAL – GUIMARÃES	60
University of Minho	
RUSSIA – MOSCOW	62
National Research University – Higher School of Economics	
RUSSIA – NIZHNY NOVGOROD	64
National Research University – Higher School of Economics	
SLOVENIA – MARIBOR	66
University of Maribor	
SOUTH KOREA – POHANG	68
Pohang University of Science and Technology	
SWEDEN – LULEÅ	70
Luleå University of Technology	
SWITZERLAND – ST. GALLEN	72
University of St. Gallen	
THE NETHERLANDS – ENSCHEDE	74
University of Twente	
THE NETHERLANDS – LEIDEN	76
Leiden University	
UKRAINE – KHARKIV	78
Simon Kuznets Kharkiv National University of Economics	
UNITED KINGDOM – LOUGHBOROUGH	80
Loughborough University	
USA – HOBOKEN/NEW JERSEY	82
Stevens Institute of Technology	

PERSONAL MEMBERS	84
Daniel Beverungen	85
Alessio Maria Braccini	85
Sara Hofmann	86
Oliver Müller	86
Stefan Stieglitz	87
Stefano Za	87
Jens Pöppelbuß	88
Marco De Marco	88
Christian Meske	89
COMPETENCE CENTERS	90
Conceptual Modeling	90
Crisis Management (C ³ M)	92
E-Government	94
Service Science	96
Smarter Work	98
Social Media Analytics	100
NETWORK RESEARCH ACTIVITIES	102
TEACHING@ERCIS	112
EVENTS IN THE ERCIS NETWORK	116
ADVISORY BOARD	120
Arvato CRM Solutions	120
avantum consult	121
Bison	122
CLAAS	123
DMI Archivierung	124
Hilti	125
Informationsfabrik	126
Lidl	127
PICTURE GmbH	128
saracus	129
Westphalia DataLab	130
zeb	131
Further Advisory Board Members	132
OUTLOOK FOR 2019	134
ERCIS TEAM	135
IMPRINT	136

9TH ANNUAL ERCIS WORKSHOP IN LULEÅ



9TH ANNUAL ERCIS WORKSHOP

Following Vaduz (Liechtenstein) in 2010, Bordeaux (France) in 2011, Kaunas (Lithuania) in 2012, Turku (Finland) in 2013, Rome (Italy) in 2014, Guimarães (Portugal) in 2015, Kristiansand (Norway) in 2016, Leiden (Netherlands) in 2017, this year's ERCIS Annual Workshop took place at the LTU (Luleå University of Technology) in Luleå, Sweden. Tero Päivärinta kindly hosted the workshop from the 22nd to the 24th of August.

Before the actual ERCIS annual workshop started, the ERCIS Competence Center E-Government had a separate meeting specialized on e-government topics.

Following the traditional structure, the ERCIS annual workshop started with a welcome reception at the Hotel Savoy close to the city center of Luleå where Birgitta Bergvall-Kåreborn, the Vice-Chancellor of the LTU, gave a great welcome speech. In this year's workshop we had participants from Austria, Belgium, Estonia, Finland, France, Germany, Italy, Liechtenstein, Lithuania, the Netherlands, Norway, Poland, Portugal, Sweden, Switzerland, and the United Kingdom.

After this warm welcome, the first workshop day started with an introduction to LTUs Digital Service Innovation research by Diana Chronéer. She highlighted the different target audiences (researchers, businesses, public sector and users) and presented several projects. A report on recent ERCIS activities by Jörg Becker was next on the agenda. After a short coffee break, the group had the opportunity to visit LTUS SICS ICE data center research facilities. The tour was guided by Tor Björn Minde, CEO of RISE SICS North at LTU. After a nice walk back to the university the participants had lunch together.



The following session was led by Philipp Ebel from the University of St. Gallen, who held a talk on using Hybrid Intelligence to deliver Digital Incubation Services and the approach on Business Model Validation for early-stage startups. After this, Alessio Maria Braccini from LUISS Business School talked about cyber risks for SMEs, the current constitution of networks and competence centers dealing with this topic in Italy as well as possibilities of cooperation within the ERCIS network.

In the afternoon, Karsten Kraume, member of the Board arvato CRM Solutions at



Participants of the ERCIS Annual Workshop

arvato AG, and Armin Stein talked about research and practice collaboration in the ERCIS network and how to further leveraging ERCIS and the network.

We welcomed a new associated partner to our network who signed the official Certificate of Membership during this workshop: Peter Kawalek and Crispin Coombs from Loughborough University introduced themselves and the institution. Peter Kawalek presented the School of Business and Economics and the Centre for Information Management (CIM) as well as their key research areas. Crispin Coombs gave an insight into their research on the Impacts of Artificial Intelligence and Robotics on Organizations and talked about the need to better account for the 'multi-layered' nature of work and where automation fits.

The day closed with the workshop dinner at O'Leary's restaurant in Luleå.

The second workshop day started with Armin Stein talking about the different Competence Centers (CCs) within the ERCIS network and how our members' expertise is bundled in them. Each CC has its own organizational structure and is open for new participants from the network.

Next, Christian Grimme from the University of Münster gave a detailed overview of the newly founded "Social Media Analytics" ERCIS Competence Center. He talked about the topics the competence center is dealing with and about its goals, for example detecting and proving disinformation and manipulation strategies, as well as creating effective counter-measures to ensure transparency and fairness in online media.

After the coffee break, Reima Suomi from the University of Turku gave an understanding about research projects dealing with the topics of waste and recycling management.

Finally, we had an open discussion on the topics of the workshop. The workshop closed with a joint lunch before everybody took the journey back home.

SAVE THE DATE

The next Annual Workshop will take place in Loughborough (United Kingdom), September 16th–18th 2019.





WELL-DESERVED RETIREMENT FOR ERCIS DIRECTOR KLAUS BACKHAUS

A network as big as the ERCIS network, continuously underlies changes and new developments concerning its members. This includes not only welcoming new ERCIS members regularly, we also have to say Goodbye to others, e.g. when they finally leave in well-deserved retirement. This year, Klaus Backhaus, ERCIS director from day one, retired from his position as ERCIS director. For many years, he shaped the profile of the ERCIS network as full professor at the Institute of Business-to-Business Marketing at the University of Münster. He was involved in several funded ERCIS projects such as ServDEA and CrowdStrom. Within the ServDEA project the operations-research method data envelopment analysis (DEA) was used to develop a software tool that is capable of benchmarking so-called service organizations. CrowdStrom was a project that aimed at developing a new business model for electric vehicle charging infrastructure. Through involvement of charging stations owned by private persons, the business model addressed challenges of the current infrastructure development for electric vehicles. The ERCIS wants to thank Klaus Backhaus for his commitment as director and constant support of the network. Happy Retirement!

10 YEARS OF PARTNERSHIP: QUT AND UNIVERSITY OF MÜNSTER



QUT meets WWU

In October Dr. Ann-Kristin Cordes, Assistant Professor at the chair for Information Systems and Information Management, gave a talk on the subject “10 Years of Partnership: QUT and University of Münster” on the 3rd Australian-German Science and Innovation Day as part of the 2018 Brisbane German Week at the Queensland University of Technology. The day organized by the Honorary Consul for Germany in South-East Queensland showcased scientific collaboration between Australian and German universities and presented the objectives, progress, and outcomes of current research projects covering a variety of scientific disciplines. Her presentation focused on the joint activities and collaboration between the two institutes BPM@QUT and IS@WWU of the past 10 years. Especially, she reported on the joint work in two international research projects: “Networked Service Society” and the current project “RISE_BPM”. The latter aims at networking world-leading research institutions and corporate innovators to develop new horizons for Business Process Management.

UNIVERSITY OF LIECHTENSTEIN RELEASES THIRD AIS GLOBAL INFORMATION SYSTEMS EDUCATION REPORT



AIS Global IS Education Report 2018 image

In his role as President of the Liechtenstein Chapter of the Association for Information Systems, Prof. Dr. Jan vom Brocke has released the third collection of global information systems education in collaboration with Dr. Markus Weinmann (University of Liechtenstein), Prof. Dr. Heikki Topi (Bentley University, Waltham, Massachusetts, USA), and Prof. Dr. Bernhard Tan (National University of Singapore). This report, the most comprehensive collection of curricula in the field of digitalization worldwide, contains more than 3,100 courses offered in more than 940 programs in 63 countries. Many ERCIS partner institutions participated in this endeavor. By editing this report, the University of Liechtenstein takes a leading role in the important field of competencies in the digital economic environment.

STUDENTS FROM GALWAY VISIT LIECHTENSTEIN



Student visit Galway

25 bachelor students together with their professor Dr. Eoin Whelan of the J.E. Cairnes School of Economics at NUI Galway, Ireland, visited the University of Liechtenstein and the Institute of Information Systems. Next to guest lectures, they also visited the regional company Hilti AG and took part in social activities in the Liechtenstein mountains. The National University of Galway and the Institute of Information Systems in Liechtenstein have already cooperated intensively in research and teaching and their partnership will be further developed. Ireland is home of most European headquarters of big digital companies and the NUIG belongs, according to the international QS ranking, to the top 1% of universities worldwide.

BEST PAPER AWARD FOR ERCIS MEMBERS FROM DUISBURG-ESSEN AND AGDER

In January 2018, ERCIS partners from University of Duisburg-Essen (Stefan Stieglitz, Björn Ross, Tobias Potthoff) and University of Agder (Tim Majchrzak, Narayan Chakraborty, Mehdi Lazreg) won a best paper award at the 51st Hawaii International Conference on System Sciences for the article: The Diffusion of Crisis-Related Communication on Social Media: An Empirical Analysis of Facebook Reactions.

HILTI SUPPORTS UNIVERSITY CHAIR FOR IT SECURITY



Hilti Chair for IT security

In order to strengthen the topic of IT security, the Hilti Family Foundation is supporting the newly established endowed chair “Data and Application Security” at the Institute of Information Systems at the University of Liechtenstein. Around a year after Michael Hilti announced this during University Day, the chair, for which Prof. Dr. med. Pavel Laskov was appointed on 1 April 2018, has begun its work. The Hilti Chair of Data and Application Security will serve to establish in Liechtenstein an independent scientific location in the field of IT security that closely interlinks research, teaching, knowledge transfer, and further education. The new chair will be instrumental in setting up the Centre of Competence for IT Security, where regular expert discussions and knowledge transfer will take place with the regional economy and society. Research will focus on identifying new types of attacks and issues regarding the security of the Internet of Things, cryptocurrencies, and autonomous systems based on artificial intelligence (AI) innovations. Since 2007, the Hilti Family Foundation supports the Hilti Chair of Business Process Management and expends its commitment now with another chair at the Institute of Information Systems at the University of Liechtenstein. Both chairs will work closely together to accompany the country in questions regarding “secure digital innovation” and provide staff specialists for regional companies.



EUROSYMPOSIUM 2018

On 20th of September 2018, the Department of Business Informatics organized an annual conference, the 11th PLAIS/SIGSAND Eurosymposium 2018, under auspices of the AIS, the ERCIS, and the Committee of Informatics of the Polish Academy of Sciences. The participants, including the keynote speaker, Prof. David Avison, presented 15 papers. The papers were published in Springer series LNBP.

NEW JUNIOR ERCIS MEMBERS



Maximilian

The network keeps growing, thanks to the efforts of our partners! We are very happy to welcome Kasper, Fine, Alarik, and Maximilian as our youngest members and wish their parents all the best!



Kasper



SARA HOFMANN JOINS THE UNIVERSITY OF AGDER

Dr. Sara Hofmann, personal ERCIS member, will join Department of Information Systems at University of Agder as Associate Professor from January 2019.

KISS (KILPISJÄRVI INFORMATION SYSTEMS SEMINAR)



Following a long tradition, the Kilpisjärvi Information Systems Seminar (KISS) took place on 8th – 13th of April 2018. Located in the deep north of Finnish Lapland, the doctoral consortium offers Ph.D. students an opportunity to present and discuss their research with senior researchers from the ERCIS network and beyond. The unique atmosphere of the seminar is rooted in the magical snowy landscape surrounding the seminar location (the biological research station of the University of Helsinki) and an equal balance between young and senior researchers. The latter allows valuable feedback to strive in a friendly and family-like setting that is daily rounded up with a sauna visit. The seminar was organized

by Professor Reima Suomi (University of Turku) and had 10 participants. The team of supervisors was enriched this year by Professor Jörg Becker and Professor Winfried Lamersdorf (University of Hamburg). The topics ranged from Sharing Economy to Gender Equality to Information Development Methods and reflected the interdisciplinary nature of the seminar. Next year, the KISS seminar is planned to take place in the first week of April. The trip to Kilpisjärvi is not the easiest one but is worth the effort. There is hardly a better retreat location for an IS researcher and, hopefully, the decades-old tradition can be kept alive in the future.

LECTURE NOTES IN INFORMATION SYSTEMS AND ORGANISATION

Lecture Notes in Information Systems and Organization – LNISO – is a series of scientific books that explore the current scenario of information systems, in particular IS and organization. The focus on the relationship between IT, IS, and organization is the common thread of this collection, which aspires to provide scholars across the world with a point of reference and comparison in the study and research of information systems and organization. The Springer series LNISO, established in 2012 by the LUISS IS group, invites ERCIS members to propose new volumes.

UNIVERSITY OF MÜNSTER – CHAIR FOR INFORMATION SYSTEMS AND INFORMATION MANAGEMENT

› University of Münster www.wi.uni-muenster.de/is



ABOUT THE INSTITUTION

The Chair for Information Systems and Information Management at the University of Münster, directed by Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker, Professor h.c. (NRU-HSE, Moscow), currently comprises ten postdocs and 21 research assistants. The courses offered by the Chair for BSc and MSc in Information Systems study programs include Application Systems, Information Modeling, and Workflow Management (Process Modeling field), as well as Data Management and Management Information Systems and Data Warehousing (Data Modeling field). Moreover, the courses Retail and Production Planning and Control cover both Process Modeling and Data Modeling in their respective domains. Members of the Chair are involved in research projects funded nationally and internationally. They publish results of their work in journals like MISQ (Management Information Systems Quarterly), EJIS (European Journal of Information Systems), BISE (Business & Information Systems Engineering), BPMJ (Business Process Management Journal), Electronic Markets, EMISA (Enterprise Modeling and Information Systems Architectures), ISeB (Information Systems and e-Business Management), and GIQ (Government Information Quarterly), as well as in conference proceedings like ICIS (International Conference on Information Systems), ECIS (European Conference on Information Systems), ER (International Conference on Conceptual Modeling), and HICSS (Hawaii International Conference on System Sciences).

RESEARCH TOPICS

Conceptual modeling has become a mainstream method for describing, designing, and reorganising Information Systems in the last decade. Many large companies use conceptual models for tasks like business process reengineering, software introduction, and compliance management. Conceptual modeling, when being transferred into practice, supports the creation of business value for companies and governmental organizations.

Retail is an area of research that is focused on organizations and application systems in the respective domain including wholesale, stationary retail, and e-commerce. Focal topics to account for interdependencies between an organization and an application system involve process management and conceptual modeling in retail, as well as Enterprise Resource Planning (ERP) systems.

E-Government deals with the aspects of administrative processes and services within governmental and inter-governmental organizations and the citizens and businesses using Information and Communication Technology (ICT). E-Government links the field of strategic management with aspects of process management and economic viability and focuses on front-end and back-office. E-Government topics can be addressed in terms of content, as well as from technical and conceptual perspectives.

Service Science research addresses different aspects of servitization – the integration of industrial machinery with customized service offerings without selling physical goods. Our research is focused on understanding and facilitating the creation of value in service systems, which involves interactions between service providers and service customers. The goals of the Service Science team are to develop a sound theory on service phenomena and to design innovative IT artifacts supporting the competitive edge of the service economy.

SELECTED CURRENT RESEARCH PROJECTS



Virtual Institute Smart Energy (VISE) - Development of Digital Business Models Based on the Energy Demand Behavior of Households: Energy providers and energy service providers only have little information regarding the determinants of their customers' energy demand behavior, especially regarding private households. A detailed analysis of expectations and requirements of private energy demand is an important prerequisite for a successful adoption of new technology and basis for the development of new business models. The project's goal is the analysis of private households' intention to invest in, and use of, as well as consequently develop new business models addressing private households.

For more information, please visit:
<https://www.smart-energy.nrw/>



The Mittelstand 4.0-Kompetenzzentrum Lingen (competence center) is a consortium that supports small and medium-sized enterprises (SME) in topics about digitalisation and digital inter-organisational collaboration in north-west Germany with an explicit focus on data-driven business models. Data-driven business models, as

a subset of digital business models, utilize data of various kinds as a key resource or data analytics as a key activity in order to generate value. Businesses of the four sectors: retail, craft, maritime, and agriculture are central players in this region. The Mittelstand 4.0-Kompetenzzentrum Lingen establishes close collaborations with SMEs of these sectors in order to jointly identify, conceptualise and develop solutions for SMEs to compete sustainably in the digital age. The overarching goal of the project is to raise awareness, inform, and impart critical competencies for SMEs in north-west Germany, regarding digitalisation topics, particularly data-driven business models.

For more information, please visit:
<https://kompetenzzentrum-lingen.digital/>

AWARDS

Prof. Becker was awarded the Transfer Prize 2017/2018 of the Westphalian Wilhelms-University Münster for the project ISO 9001:2015 with the modeling language icebricks together with the WEICON GmbH & Co. KG.



Our research assistants Andreas Hermann ("Collaboration and Coordination in Spare Parts Supply Chains – Development of a Taxonomy for Spare Parts Supply Chains") and Marco Niemann ("Towards Detection of Abusive Language in German Online Media - Concept and Implementation of a Machine-Learning Approach") received the CLAAS AlumniUM-Master-Award for their outstanding master theses.

SELECTED PUBLICATIONS

Please see
<http://www.erc.is/go/is-publications>
for a complete list of publications.

Chasin, F., von Hoffen, M., Hoffmeister, B., & Becker, J. (2018). The Graveyard of the Shar-

ing Economy: Understanding Sharing Business Failures. *Management Information Systems Quarterly (MISQ)*, (Accepted)

Gorbacheva, E., Beekhuizen, J., vom Brocke, J., & Becker, J. (2018). Directions for research on gender imbalance in the IT profession. *European Journal of Information Systems*, forthcoming.

Ogonek, N., & Becker, J. (2018). Can we Learn from Down Under How to Rise Up in E-Government? A Comparative Analysis of the Public Sector Competences in the German and Australian Higher Education Systems. In *Proceedings of the Hawaii International Conference on System Sciences 2018*, Big Island, Hawaii, 2256–2265.

Paukstadt, U., Bergener, K., Becker, J., Dahl, V., Denz, C., & Zeisberg, I. (2018). Design Recommendations for Web-based Career Guidance Platforms — Let Young Women Experience IT Careers! In *Proceedings of the Hawaii International Conference on System Sciences (HICSS)*, Hawaii, USA.

Siemen, C., Clever, N., Barann, B., & Becker, J. (2018). Requirements Elicitation for an Inter-organizational Business Intelligence System for Small and Medium Retail Enterprises. In *Proceedings of the 20th IEEE International Conference on Business Informatics (CBI) 2018*, Vienna, Austria. (Accepted)

Voscort, J., Monhof, M., & Becker, J. (2018). A Product Service System Configurator for Repurposing Used Electric Vehicle Batteries. In *Proceedings of the European Conference on Information Systems (ECIS)*, Portsmouth, United Kingdom. (In press)

DISSERTATIONS

Chasin, Friedrich: Design and Development of a Sharing and Collaborative Consumption Service for Electric Vehicle Charging Infrastructure.

Distel, Bettina: Explaining Citizens' Non-Adoption and Adoption of E-Government in Germany.



CONTACT DETAILS

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von Hoffen, Moritz: Developing Sharing Economy Services — Artifacts for Peer-to-Peer Sharing and Collaborative Consumption Services.

Monhof, Markus: Product-Service Configuration for Repurposing used Electric Vehicle Batteries: Design of an Information System for Decision Support.

Plenter, Florian: Service-oriented Business Models for the Electric Vehicle Battery Life Cycle.

Scholta, Hendrik: Standardization of Government Forms through Reference Modeling: A Method.



TMF-Workshop in Berlin about MDM-Portal with participants from Germany, Austria and Belgium, organized by the Institute of Medical Informatics

ABOUT THE INSTITUTION

The Institute of Medical Informatics (IMI) is dedicated to research and teaching for the full range of informatics applications in medicine. It was founded in 1973 and belongs to the Medical Faculty. Since 2009 it is headed by Martin Dugas. It provides lectures, seminars and courses in small groups regarding Medical Informatics for medical as well as informatics students. The institute has a long tradition regarding research on information systems in healthcare. Nowadays, the future of information systems in healthcare, specifically regarding electronic health records (EHRs), is a key research focus of our group. Personalised medicine is built upon clinical and molecular data. Therefore data mining and pattern recognition techniques for genomic data, in particular derived from next-generation sequencing of cancer tissue, is an important research focus.

RESEARCH TOPICS

IMI focuses on informatics for personalised medicine. Due to the digital revolution, the relevance of informatics within all fields of medicine is constantly rising. There is a wide scope of applications, ranging from molecular biology over clinical medicine to public health.

The integration of clinical and molecular data, especially analysis of next-generation sequencing (NGS) in cancer research, is a well-established focus of the institute with national and international cooperations for many years. The rapid increase in data volumes of high-throughput sequencing in molecular medicine (“big data”) poses constant challenges from an informatics point of view.

A major portion of the data needed for clinical studies is also relevant for routine patient care. At present, data for studies and patient care are managed in separate systems. Hence, design and efficient implementation of interoperable information systems in healthcare is a major research topic. Open Metadata is key for interoperability. Specific research topics are data models with semantic annotations and methods for metadata management. Application fields are electronic health record (EHR) and electronic data capture (EDC) systems.

CURRENT RESEARCH PROJECTS

Health Informatics (eHealth)

The world-wide largest public portal of **medical data models** (<https://medical-data-models.org>) is managed by IMI. It is a registered official European Research Infrastructure. To date it contains **18.000+ data**

models and 420.000+ data items with semantic annotations. These data models are available in 18 download formats, in particular CDISC ODM, HL7 FHIR and openEHR ADL. MDM has **1.200+ users** worldwide. Recently a Spanish GUI was added. The IMI project mobile patient questionnaires (<http://mopat.uni-muenster.de>) integrates EHR and patient reported outcomes. Currently this software tool is applied successfully in a large European study with multilingual data collection in the field of dermatology. IMI is part of the new DFG clinical research unit “Translational Pruritus Research” (CRU 2690). Also, several new projects regarding Medical Apps were started in 2018.



Biomedical Informatics

IMI participates in the new DFG clinical research group “Male Germ Cells” (CRU 326). The work on MDS-RIGHT, a European project coordinated by Nijmegen University, is progressing to analyse mutations in Myelodysplastic Syndrome (MDS). MDS-RIGHT assesses approximately 1000 patient cases with Next-Generation Sequencing (NGS) technology. IMI performs bioinformatics for project partners from the Netherlands, France, Sweden and Spain. About one third of MDS patients develop leukemia - the objective of the project is to improve diagnostics and therapy using biomarkers from NGS.

Together with Prof. Birgit Burkhardt and Dr. Kornelius Kerl (Pediatric Oncology), NGS data from lymphoma and brain tumor patients are being analysed (funded by German Cancer Aid foundation). Recently, methods for NGS analysis of single cells were implemented.

PUBLICATIONS

Dugas M: Medizininformatik Springer Vieweg. Berlin Heidelberg 2017. ISBN 978-3662533277



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AWARDS

Dr. Sarah Sandmann: Paper of the month 06/2018 (appreci8, published in Bioinformatics)

UNIVERSITY OF MÜNSTER – CHAIR FOR INFORMATION SYSTEMS AND LOGISTICS

› University of Münster www.wi.uni-muenster.de/scm



ABOUT THE INSTITUTION

Today's supply chains (SC) have to cope with growing uncertainties and complexity, e.g. from increasingly volatile customer demand, natural or human threats, or through an increasing number of actors in the value adding process. Tackling these issues is the major objective of the Chair for Information Systems (IS) and Supply Chain Management (SCM), directed by Prof. Dr.-Ing. Bernd Hellingrath. In particular, the chair develops application-oriented research contributions in the areas of SCM, logistics and operations management with regard to the support by IS. Special focus lies in understanding current logistics and manufacturing issues, resolving them by applying and developing new modeling and planning methods. In this context, research is fostered by a culture of internationalization, exemplified by the growing number of international research partners and projects conducted.

RESEARCH TOPICS

Design of Global Supply Chains: Planning the worldwide production footprint is a strategically crucial task for every company operating globally to stay competitive. Volatile exchange rates and customer demands in conjunction with a political regression to protectionism require appro-

priate decision support tools. The research group develops planning approaches for the design of production networks in a globalized and volatile world.

Spare Part Management: Condition monitoring enables an early identification of machine breakdowns and thus facilitates more precise planning and management of spare parts and maintenance services. The group focuses on approaches and data analytics methods for the introduction and improvement of diagnostics and prognostics in predictive maintenance. Moreover, the group investigates corresponding spare parts supply chains regarding their actors' collaboration and coordination in providing spare parts and maintenance services.

Digitized Supply Chain: Advances in the area of computing power, data storage capabilities etc. affect supply chain management regarding its processes, products, and business models. The group researches ways to digitize the supply chain and apply new technologies such as AI.

Sales & Operations Planning (S&OP): Cross-functional integration within a company and along the supply chain are essential for today's business success. S&OP

addresses this challenge by constantly aligning decisions in sales, marketing, finance, and operations. The group investigates state-of-the-art S&OP implementations and develops concepts to facilitate efficient industrial applications. The research is conducted in close collaboration with the Pontifical Catholic University of Rio de Janeiro.

Humanitarian Logistics and Crisis Management: Supply chain and logistics management are crucial to effective disaster response. The group conducts research on modeling, performance measurement, and simulation of humanitarian supply chains as well as the design and evaluation of supporting information systems.

Supply Chain Security: Threatened by theft, smuggling, and other criminal activities, supply chains are a crucial element of today's critical infrastructures and need to be protected to ensure the global flow of goods and to maintain civil security. The group focuses on the design and analysis of security relevant processes by means of business process management and enterprise architecture management.

RESEARCH PROJECTS

DRIVER+ (Driving Innovation in Crisis Man-

agement for European Resilience) is a project funded under the 7th Framework Programme of the European Commission. Its main aim is to cope with current and future challenges due to increasingly severe consequences of natural disasters and terrorist threats by the development of innovative solutions that address the operational needs of practitioners dealing with crisis management. The chair is member of the review board and contributes to the development, application, and evaluation of the test-bed methodology.

The interdisciplinary project **Agent-Based Simulation of Epidemic Diseases** targeted the development of a modular simulation platform that combines code-free modeling, visual analytics and data exploration capabilities to increase usability for domain experts. In collaboration with medical researchers of the Münster University Hospital, the software package was used to simulate latest outbreak scenarios of Influenza in Germany and evaluate effective countermeasures.

EVENTS

Within the WWU.USP cooperation project, the **Workshop on Information Systems** brought together several professors and Ph.D. students from both **University of São Paulo (USP)** and **ERCIS/WWU**. During one week, researchers presented and exchanged their current research topics and held bilateral meetings that resulted in many ideas for further projects, research, and teaching collaborations. One of the achieved results was the integration of USP into the ERCIS network.

On February 5-6 2018, a hands-on workshop was organized to introduce the newly released platform for **Agent-Based Simulation of Epidemic Diseases** that was developed in collaboration with the Münster University Hospital. Professors and researchers from different universities and German research centers had the opportunity to learn how to use the software to create individual models, sharing research expertise, and networking.

We are pleased to announce that Prof. Hellingrath was elected as a new **member of the scientific advisory board of the BVL**. The German "Bundesvereinigung Logistik" is a non-profit association to promote the interdisciplinary training and research in logistics-related topics. Its scientific advisory board, a group of renowned professors from the logistics domain, is tasked to identify relevant logistical topics in society, politics, and business as well as defining fields of action.

Under the umbrella of the ERCIS Competence Center for Crisis Management, Prof. Hellingrath and Adam Widera visited the **cooperation partner from the Center for Collaborative Systems for Security, Safety and Regional Resilience at the University of Washington** in Seattle, USA. The objective of this second annual meeting was to develop a virtual lecture between Münster and Seattle as well as to work on joint research activities.

The 15th International Conference on Information Systems for Crisis Response and Management (ISCRAM2017) in Rochester, USA, aims at exploring all dimensions of the IS domain to improve and contribute to Crisis and Disaster Management. Together with Prof. Gyöngyi Kovacs from the HULL group at the Hanken School of Economics the group co-organized the track **"Logistics and Supply Chain Management in Crisis Response"** at the conference.

PUBLICATIONS

Hellingrath, B., Gojmerac, I., Widera, A., Bendjoudi, A., de Albuquerque, J. P., Salient, O., Middelhoff, M., Yahiaoui, S. (2018) Proceedings of the 2017 4th International Conference on Information and Communication Technologies for Disaster Management. ICT-DM, Münster.

Hellingrath, B., Lechtenberg, S. (2018) Applications of Artificial Intelligence in Logistics and Supply Chain Management. ISSL, Magdeburg.



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Israel, E., Kreuter, T., Scavarda, L. F., Hellingrath, B. (2018) Current State and Research Directions of Supply Chain Integration. 30th NOFOMA, Kolding.

Lechtenberg, S., Widera, A., Hellingrath, B. (2018) Research Directions on Decision Support in Disaster Relief Logistics. ICT-DM, Münster.

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UNIVERSITY OF MÜNSTER – INSTITUTE FOR INFORMATION, TELECOMMUNICATION AND MEDIA LAW (ITM) – CIVIL LAW DEPARTMENT

› University of Münster www.wi.uni-muenster.de/jura.itm/hoeren



ABOUT THE INSTITUTION

The ITM is the leading Institute for Information, Telecommunication and Media Law in Germany. The Institute's work aims at exploring the legal framework and underlying policies of the information society with a particular focus on "information" as an economic and cultural good. The Institute emphasises the importance of interdisciplinary work since a proper understanding of technological or economic backgrounds is a prerequisite for successful regulation. Many activities are carried out in close cooperation with the Faculty of Economics of the University of Münster. In 2002, the ITM was appointed the Competence Centre in Information, Telecommunication and Media Law for North Rhine-Westphalia.

Dr. Thomas Hoeren is a professor of civil law at the University of Münster and has been the director of the ITM since 1997. Due to international projects such as TIMBUS Prof. Hoeren has become recognised as a specialist in information law throughout Europe.

RESEARCH TOPICS

Our research focuses on Information Law, Telecommunication Law and Media Law as well as related areas such as Antitrust and Consumer Protection Law. Since Information, Telecommunication and Media Law is characterised as a cross-sectional matter, it cannot be fully covered by any of the traditional legal disciplines by itself. The ITM, therefore, strives for interdisciplinary research and teaching activities.

CURRENT RESEARCH PROJECTS

Currently, the ITM is involved in several EU-funded and national projects:

ABIDA (Assessing Big Data) is an interdisciplinary research cluster funded by the Federal Ministry of Education and Research (BMBF) focusing on social, legal, political, ethical and economic research with regard to Big Data. The project is managed by the ITM and the Institute for Technology Assessment and System Analysis in Karlsruhe (ITAS). Furthermore, the Berlin Social Science Center (WZB), the Technical University Dortmund, the Ludwig-Max-

imilians-University Munich as well as the University of Hannover are project partners. The project aims at monitoring and assessing current developments regarding Big Data, taking into account public opinion and bringing together expert knowledge. Several research groups and external researchers work on interdisciplinary in-depth studies, which are assessed in expert workshops and a national symposium. Moreover, three citizens' conferences and a representative opinion survey have been carried out in order to ensure an extensive involvement of the public. On this basis all relevant issues will be analyzed and evaluated to provide options for political decisions, further research and economic approaches as well as to point out possible alternatives. Initiated in March 2015, the project is scheduled for a period of 48 months.

Research Center for Industrial Property Rights: The ITM also hosts the Research Center for Industrial Property Rights, which offers training and conducts research activities in the field of industrial property rights trying to connect science and economics. The Research Center is supported by an association of companies, lawyers and patent attorneys.

Art Law Clinic is a project in cooperation with the Academy of Fine Arts Münster. Its basic idea is: "Law students for art students". Art students can seek the help of law students in senior classes to solve their basic legal problems, which occur during their academic studies. The service is entirely free and coordinated by employees coming from the ITM and the Academy of Fine Arts Münster. Additionally, a legal guideline will be provided, giving students an entry point and further information on the topic of art law. By combining the inherently different but closely connected topics of law and art, the project will increase the interdisciplinary and mutual understanding between law students and art students and their respective subjects.

Matters of Law in the German Research Network (DFN): The German Research Network (Deutsches Forschungsnetz / DFN) provides a communication network for universities and research facilities in Germany that not only connects them with one another but also with the community of research and education networks worldwide. Increasingly, the DFN-members are facing legal questions regarding liability, telecommunications and data protection. The ITM assists in solving those difficult issues and offers general legal advice to the members.

RWTÜV Foundation Assistant Professorship of IT Law: This professorship promotes young researchers in the field of IT law. In fall of 2016 Prof. Dr. Nikolas Guggenberger, LL.M. (Stanford) obtained this position. His research focuses on law and innovation, specifically on the implications of blockchain technology, smart contracts and the automation of law.

AWARDS

Prof. Dr. Thomas Hoeren was honored with the award for German-Dutch science cooperation by the Dutch government and the Daidalos silver medal by the German Academic Scholarship Foundation.

DISSERTATIONS/HABILITATIONS

Katharina Brandt (2018): Der Product-by-process-Anspruch im System des deutschen Patentrechts.

Christina Brüggemann (2018): Die rechtliche Zulässigkeit von Online-Werbeblockern.

Christoph Brünger (2018): Die Kommunikation vernetzter Fahrzeuge aus telekommunikationsrechtlicher Perspektive.

Nicolai Culik (2018): Big Data-Anwendung im Personalwesen nach der EU-Datenschutz-Grundverordnung.

Maria Kairies (2018): Neue Modelle im Filmförderrecht.



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Susanne Mentel (2018): Untersuchung der rechtlichen Ansprüche Betroffener bei Predictive Analytics unter besonderer Berücksichtigung der Haftung für fehlerhafte Informationen.

Silvio Schulze (2018): Daten als Kreditsicherungsmittel mit Bestand in der Insolvenz.



ABOUT THE INSTITUTION

Our research explores the impact of information and communication infrastructures in an organizational context. We are interested in the development of the digital organization: How do organizations and leaders respond to the challenges and opportunities of an informed society and economy? In particular, we study new modes of organizing, coordination and collaboration from the micro level of work practices, to the meso level of group practices and the macro level of infrastructure development.

We aim to understand the dynamics of transformation in a historical, societal, regulatory, and economic context. Our work is theoretically and empirically grounded, we employ multiple methods and research approaches with an emphasis on qualitative, interpretative approaches.

It is our research philosophy that the implications of innovative ICT become visible and understandable in the context of (communities of) practices. In order to study practices in situ, we advocate approaches, which facilitate research and experimentation in complex real world settings addressing business or societal innovation. Typically, multiple stakeholders and researchers from different disciplinary backgrounds are involved.

RESEARCH TOPICS

We pursue this agenda through three inter-related fields of research:

1. The Communication and Collaboration Management group, led by Dr. Simeon Vidolov, is broadly concerned with understanding the role of technologies, knowledge and collaborative processes, both within and between organizations and broader social networks. The principal aim of the Group is to promote the critical study

of communication, coordination, and collaboration practices that are seen as central to the relationship between technology and organizational and societal changes. A prominent focus in our research is the examination of the material and affective aspects of organisational and social life, and the practices through which they are being mediated and performed. Some of our research themes include:

- Virtual and distributed forms of working and organizing,
- Collaborative practices and trust production in complex network arrangements,
- Role of affectivity and embodiment in process of learning and collaboration,
- Critical approaches to project management, and its performativity and politics,
- Enterprise social networks and workplace analytics

2. The research group on Strategic Information Management (RG SIM), led by Dr. Alexander Teubner, does research on the management challenges that executives face in the Digital Age. The following challenges are in the focus of the group's current research:

IT/IS Strategies for the Digital Age: Which issues should top-managers consider when devising IT strategies? How to devise IT/IS strategies and how to align them with business strategies?

Digital Transformation and Technochange: How to align changes of the IT-based infrastructure with organizational change? How to plan, control, and coordinate large, complex and risky IT endeavours comprising a larger set of interrelated IT projects?

IT/IS Investment Evaluation and Control: What kind of IT investments should digital

organizations make? How to decide on IT-investment alternatives? What is the business value of IT investments? How to control the IT/IS investment portfolio for value delivery?

IT Outsourcing and Organization: Which IT tasks can and should be outsourced and what are appropriate sourcing modes (offshoring vs. nearshoring, single vs. multi-vendor sourcing)? Alternatively, how to best organize the in-house IT/IS function in digital organizations?

3. The Interorganizational Systems group studies the evolution of information infrastructures, such as electronic markets or platforms, over long periods of time. We take a particular interest in the development and transformation of interorganizational information infrastructures and related theoretical as well methodological questions. Specifically we study:

- How to facilitate collective action in heterogeneous actor constellations or coalitions, as the development of infrastructures involves commitment and coordination of diverse actors,
- How standards, which may affect strategic interests, can be developed and widely diffused,
- How industry structures, specifically structures of intermediation, are transformed alongside the proliferation of ICT.

We study these issues in the context of the health care sector, travel & tourism and the academic publishing industry.

CURRENT RESEARCH PROJECTS

Digital Transformation and Technochange (Dr. A. Teubner, J. Stockhinger)

The use of prefixes such as "Information" or "Digital" in combination with "Age", "Society", or "Economy" highlight the role of IT as a fundamental driver of soci-

etal and economic transformations. In this situation, organizations cannot help but embrace IT as an important enabler and catalyst for reinventing themselves and continually adapting to such changing conditions. However, IT is not only a technology to be simply "introduced" into the organization, but it challenges established organizational arrangements, routines, and practices. Technochange research acknowledges that the established disciplines of organizational change and IT project management are not well positioned to address this issue: The first tends to misconceive IT as a given, "deterministic artefact", the second much perceives projects as "exercises in technical change". Our research builds on programme management as an approach for integrating project driven technical changes and organizational changes.

From artifact to infra structura – The prescription as intellectual and material vantage point to the design of social infrastructure (Dr. S. Schellhammer, WWU, Dr. M. Avci, RWTH) IS scholars from RWTH Aachen and WWU Münster will work with pharmaceutical historians from the Philipps University of Marburg and the German Pharmacy Museum in Heidelberg to investigate the formation and development of a cornerstone of today's healthcare system – the drug prescription. It will create one of the largest digital collections of prescriptions from the early modern period to modern times in German-speaking countries. The Federal Ministry of Education and Research will support this project over the next 4 years with a volume of approximately 1 million Euros.

Interorganizational Ambidexterity (Prof. D. Vieru, TELUC University, Montréal, Prof. S. Klein) The ability to combine exploitation, (i.e. optimizing existing processes and products), and exploration, (i.e. searching for new and innovative approaches towards technology, business processes, or markets), is called ambidexterity and seen as important driver of sustainable economic success. We study, how companies use

interorganizational collaboration in order to efficiently balance exploration and exploitation and extend their ambidexterous capabilities in the context of small and medium size IT service providers.

Preliminary findings suggest that the companies we have studied are aware of the challenge and have found different practices to ensure not only enough space for exploration with partners but also to use innovation to improve their routine operations.

SELECTED PUBLICATIONS

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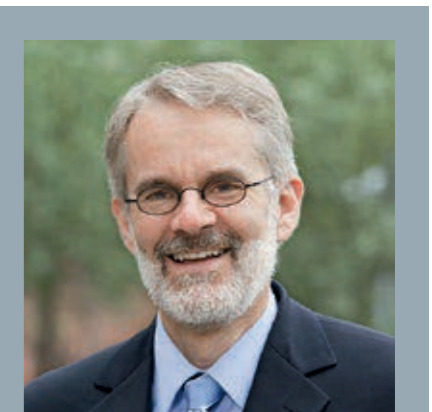
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ABOUT THE INSTITUTION

Prof. Dr. Herbert Kuchen is leading the Practical Computer Science group since 1997. He is teaching in the area of software engineering, programming languages, and programming. Maintaining close collaborations with several local companies, his group is offering students the chance to write bachelor and master theses with high practical relevance.

RESEARCH TOPICS

The research of the group focuses on selected aspects of Software Engineering. Fields of research are Business Apps, Model-Driven Software Development, Domain-Specific Languages, Testing, the Integration of Programming Paradigms, Parallel and Distributed Programming, Swarm Intelligence, and E-Assessment.

CURRENT RESEARCH

We continue to explore cross-platform development approaches to develop mobile applications for business purposes (so-called Business Apps). We look specifically into model-driven approaches to app development, including for novel app-enabled devices. Our MD² framework allows modeling an app using a domain-specific language (DSL) and automatically generates Android and iOS smartphone apps as well as Wear OS smartwatch apps from the same specification. In addition, a visual app development language called MAML empowers non-technical users to model apps in a process-oriented fashion without writing a single line of code. In cooperation with the University of Sao Paulo, current research also focuses on the challenges of accessibility in mobile apps and aims to provide solutions for developers with little expertise in accessible software by applying model-driven techniques.

The Muenster Skeleton Library (Muesli) is a collection of high-level concepts that facilitate the development of parallel programs. The library contains so-called algorithmic skeletons, i.e. frequently recurring parallel programming patterns, which can be easily and efficiently combined to develop paral-



lel applications. Recently, we have developed a domain-specific language, which aims at making efficient parallel programming even more accessible. The goal is to reduce the language to necessary core features and to generate efficient parallel C++ programs based on models expressed in that language. We have also conducted a project seminar in which students developed a generator for GPU code.

Another research field is the automatic generation of test cases based on the symbolic execution of Java bytecode. In particular, we have extended the Münster generator of glass-box test cases (Muggl) such that it now also reaches control-flow coverage in the presence of accessed databases and web services. Moreover, we have developed a tool that automatically generates test cases for the user interface of JSF-based web applications. We have also developed an approach that runs large JUnit test suites in a distributed environment, reducing the overall execution time. Currently, we are also working on analyzing programs (smart contracts) deployed on the Ethereum blockchain.

The symbolic Java virtual machine (SJVM) of Muggl is also generalized into the runtime for a novel programming language, the Münster logic-imperative language (Muli). Muli seamlessly integrates constraint (logic) programming and object-oriented programming. A recent extension of Muli allows the treatment of infinite search

spaces based on encapsulated search and lazy streams.

Our research on e-assessment focuses on the detection of design patterns. Additionally, we are working on a distributed system to process footage of recorded lectures.

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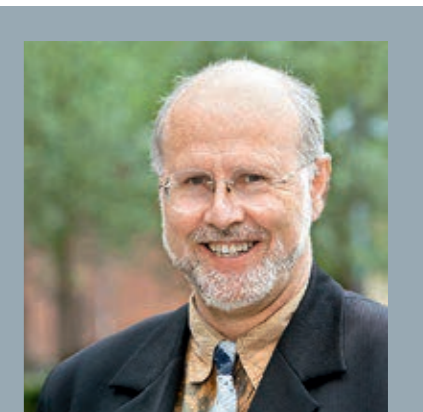
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Wrede, F., Menezes, B., Pessoa, L. F., Hellingrath, B., Buarque, F., & Kuchen, H. (2018). High-level Parallel Implementation of Swarm Intelligence-based Optimization Algorithms with Algorithmic Skeletons. In *Bassini, S., Danelutto, M., Dazzi, P., Joubert, G. R., & Peters, F. (Eds.), Parallel Computing is Everywhere* (pp. 573–582).



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Advances In Parallel Computing: Vol. 32. Amsterdam, Berlin, Washington DC: IOS Press.

Wrede, F., Rieger, C., & Kuchen, H. (2018). Generation of High-Performance Code Based on a Domain-Specific Language for Algorithmic Skeletons. In *Proceedings of the High-Level Parallel Programming and Applications (HLPP '18)*, Orléans, France.

DISSERTATIONS

Vincent von Hof: Ensuring Software Quality in the Testing Process.



ABOUT THE INSTITUTION

Heike Trautmann is head of the Information Systems and Statistics group as well as a director of ERCIS and the ERCIS Omni-Channel Lab powered by Arvato. Currently, she is also Vice Dean for Internationalization at the Münster School of Business and Economics. The team contributes to the research areas of Data Science and Big Data, (multi-objective) optimization, evolutionary computation, automated algorithm selection and computational intelligence in games in international collaborations. Industrial collaborations support the transfer from theory to applications in industry.

RESEARCH TOPICS

Some of the most challenging real-world problems involve the systematic and simultaneous optimization of multiple conflicting objectives. As most of those Multi-Objective Optimization problems cannot be solved exactly, we apply optimization techniques from Evolutionary Computation.

In the context of Algorithm Benchmarking, the group evaluates the performance of nature inspired-techniques and contributes to algorithm design. Algorithm Selection means the selection process of suitable algorithmic approaches in an automated fashion. Methodologically, identified problem properties are matched to

known algorithms' performance in order to find the best approaches for a given problem (Exploratory Landscape Analysis). Together with the Configuration and Selection of Algorithms (COSEAL) research group, the team is strongly involved in this area focusing on vehicle routing and continuous optimization.

Moreover, the group is highly interested in designing automated algorithm configuration and selection strategies operating on data streams. In this context, Heike Trautmann took part in a Dagstuhl Seminar on "Automating Data Science". In general, the group addresses Data Science issues related to Big Data applications such as omni-channel customer relationship management, specifically customer segmentation (ERCIS Omni-Channel Lab powered by Arvato), or propaganda and disinformation detection in online media (Project Prop-Stop). The latter fundamentally focuses on social media which led to the recently founded ERCIS Competence Center "Social Media Analytics".

A huge interdisciplinary success in the field of Artificial Intelligence and Machine Learning was achieved by Mike Preuss in collaboration with the WWU chemistry department. The research on automatizing chemical retrosynthesis by machine

learning was published in the prestigious Nature journal. Mike Preuss joined LIACS at Leiden University as a professor in November 2018.

CURRENT RESEARCH PROJECTS

DemoRESILdigital (www.demoresildigital.uni-muenster.de): "Democratic resilience in times of online-propaganda, fake news, fear- and hate speech". This junior research group is supported by the Digital Society research program funded by the Ministry of Culture and Science of the German State of North Rhine-Westphalia and associated with the Department of Communication at WWU Münster and the Information Systems and Statistics Group.

PropStop (www.propstop.de/?lang=en), funded by the BMBF, Detection, Analysis and Mitigation of Online Propaganda: The three-year project, started in June 2016, is concerned with the detection of propaganda and disinformation attacks in online media.

The **ERCIS Omni-Channel Lab – powered by Arvato** (<https://omni-channel.ercis.org>) combines knowledge from research and experience from practice to innovate omni-channel customer relationship management.

The DAAD funded project "**Instance-Based Algorithm Selection for TSP**" in collaboration with the University of British Columbia, Vancouver, Canada focuses on automated algorithm selection.

The **COSEAL** (configuration and selection of algorithms) research group (<http://www.coseal.net>) is an international consortium of researchers which addresses current challenges from Algorithm Selection, Algorithm Configuration and Machine Learning.

The group strongly supports the joint European initiative **CLAIRE** (Confederation of Laboratories for Artificial Intelligence Research in Europe, www.clair-ai.org) that seeks to strengthen European excellence in AI research and innovation.

AWARDS

Pascal Kerschke received the WWU PhD award of the faculty in December for his dissertation in 2017 on "Automated and Feature-Based Problem Characterization and Algorithm Selection Through Machine Learning" which was graded with summa cum laude.

Heike Trautmann is Guest Researcher at the Leiden Institute of Advanced Computer Science (LIACS).

EVENTS

In March, Christian Grimme organized a Workshop on Online Propaganda and Social Bots at the Medienkompass NRW, March 2018.

In June, the whole group visited LIACS in Leiden for a 2-day research cooperation workshop.



In September, Pascal Kerschke and Mike Preuss joined a meeting of the EU-funded COST Action "Improving Applicability of Nature-Inspired Optimisation by Joining Theory and Practice".

Parallel Problem Solving From Nature (PPSN), September 2018: Mike Preuss gave a tutorial on "The Most Recent Advances on Multi-Modal Optimization" and a joint tutorial on "Exploratory Landscape Analysis" together with Pascal Kerschke. Also, they organized two related workshops.

In September, Heike Trautmann and Pascal Kerschke joined the annual COSEAL workshop in Paris, France in their role as advisory board members.

Christian Grimme was invited to a High-Level Conference on Election Interference in the Digital Age – Building Resilience to Cyber-Enabled Threats in Brussels, October 2018.

PUBLICATIONS

Carnein, M., & Trautmann, H. (2018). Optimizing Data Stream Representation: An Extensive Survey on Stream Clustering Algorithms. Business and Information Systems Engineering (BISE).

Carnein, M., & Trautmann, H. (2018). evoStream – Evolutionary Stream Clustering Utilizing Idle Times. Big Data Research.

Grimme, C., Assenmacher, D., & Adam, L. (2018). Changing Perspectives: Is it Sufficient to Detect Social Bots?. In Proceedings of the International Conference on Human-Computer Interaction, Las Vegas, United States of America.

Kerschke, P., & Trautmann, H. (2018). Automated Algorithm Selection on Continuous Black-Box Problems By Combining Exploratory Landscape Analysis and Machine Learning. Evolutionary Computation Journal.

Kerschke, P., Wang, H., Preuss, M., Grimme, C., Deutz, A., Trautmann, H., & Emmerich, M. (2018). Search Dynamics on Multimodal Multi-Objective Problems. Evolutionary Computation Journal.

Li, L., Wang, Y., Trautmann, H., Jing, N., & Emmerich, M. (2018). Multiobjective evolutionary algorithms based on target region preferences. Swarm and Evolutionary Computation.

Kerschke, P., Bossek, J., & Trautmann, H. (2018). Parameterization of State-of-the-Art Performance Indicators: A Robustness Study Based on Inexact TSP Solvers. Genetic and Evolutionary Computation Conference (GECCO '18).



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Segler, M., Preuss, M., & Waller, M. (2018). Planning Chemical Syntheses with Deep Neural Networks and Symbolic AI. Nature, 555, 604–610.

DISSERTATIONS

Bossek, Jakob: Investigating Problem Hardness in (Multi-Objective) Combinatorial Optimization: Algorithm Selection, Instance Generation and Tailored Algorithm Design.

HABILITATIONS

Grimme, Christian: Hybridization of Algorithmic Decision Support in Optimization and Data Analytics.

UNIVERSITY OF MÜNSTER – CHAIR OF COMPUTER SCIENCE – DBIS GROUP



ABOUT THE INSTITUTION

Databases and database systems have always been at the heart of information systems. While their visibility has been decreasing in recent years, their importance as a core infrastructure underlying modern IT systems, including those on the Web and in the cloud, has always been growing. This is due to the fact that database systems offer functionality, such as high-level querying or transactional contracts, that is central to many applications, and that they have adapted to the growing requirements regarding availability, scalability, and data modelling. The DBIS Group in the Department of Information Systems at the University of Münster is a member of the European Research Center for Information Systems (ERCIS) and as such studies challenges regarding the adoption, application, exploitation, and usage of databases, data warehouses, and other data management systems in business-oriented domains.

Dr. Gottfried Vossen, Professor of Computer Science and head of the group, is a Fellow of the German Computer Science Society (GI), Honorary Professor at the University of Waikato Management School in Hamilton, New Zealand, and a European Editor-in-Chief of Information Systems, an International Journal. He is chairman of the steering committee of the German information technology certification agency Cert-IT and serves on several editorial boards and program committees.

RESEARCH TOPICS

Research topics currently studied by the DBIS Group include challenges involving data and processes, data warehousing, (social) business process management, gamification in business contexts, Big Data processing and handling, data marketplaces, their pricing and querying, and specific challenges related to digitization and digital transformation. Our approach is based on the conviction that (business) processes and process models are elementary tools for perceiving and analyzing data-driven applications. In order to execute a process, however, appropriate means for managing the data that arises in high quantities, high frequency, and high variety, and hence requires suitable tools for its processing. This is where we derive our research topics from.

CURRENT RESEARCH PROJECTS

ERCIS Omni-Channel Lab

Powered by Arvato

In the summer term 2016 the ERCIS Omni-Channel Lab Powered by Arvato was founded in cooperation with the University of Münster involving the chairs of Prof. Dr. Becker, Prof. Dr. Vossen, and Prof. Dr. Trautmann. Arvato as one of the world's leading providers for customer services faces the necessity to serve clients a holistic view about their customers across different communication channels, e.g. voice, mail, e-mail, chat, and social media

to improve the customer interaction for the client. The challenge to implement such an omni-channel solution from the data management perspective is given by the volume, the variety, and the accessibility of the data. Therefore, the DBIS group will focus on developing a big data integration concept and an appropriate data management architecture.

Goal-oriented Business Intelligence Architecture

Goal-oriented Business Intelligence Architectures (GOBIA) are a current research effort of the DBIS Group. GOBIA aims to fuse traditional Data Warehouses (DWH) and novel Big Data technologies, such as the Apache Hadoop ecosystem, on an architectural level. In previous days, mostly DWH technologies were considered for Business Intelligence (BI) architectures. With the advent of Big Data, technological possibilities grew so tremendously that it became challenging to select the “right” technology for an analytical task. Often, even a combination of technologies is needed to fulfill it. To navigate through these choices, GOBIA enhances a reference architecture (GOBIA.REF) for analytical tools with a development process (GOBIA.DEV). GOBIA.DEV focuses on the actual business goals and requirements to derive a conceptual architecture and, using this, to find suitable technologies. In the end, GOBIA should allow to employ a specific use case to narrow down the most fitting choices from a vast technology solution space and to clarify upon the needed analytical functionality and data.

Semiotic-inspired Query By Example for non-database experts

The research project Semiotic-inspired Query By Example (SQBE) aims to support the growing number of non-database experts, such as journalists, business administrators, and biologists, that are required to access and explore data to write more personalized and appropriate database queries. For these database end-users, query formulation becomes a highly iterative and time-consuming process of rewrites

ing queries and interpreting produced results. To alleviate this problem, SQBE introduces a novel process – inspired by the concepts of semantics, personalization, and interpretation borrowed from the field of Semiotics – in which user preferences are naturally incorporated to synthesize queries that capture the underlying user intention and information needs. SQBE applies intelligent algorithms to synthesize queries from a few tuple examples provided by the user. Future developments of SQBE involve the democratization of data exploration by means of a flexible and user-centric query formulation mechanism in which users are not required to possess any database-specific knowledge.

EVENTS

- Regular meetings of the TDWI Roundtable as well as of the GI Regional Group Münsterland
- ERCIS Launch Pad, annually in Münster, in 2018 on 28th November

PUBLICATIONS

D. Lehmann, D. Fekete, G. Vossen: Technology Selection for Big Data and Analytical Applications; Open Journal of Big Data (OJBD) 3 (1) 2017, 1–25.

F. Stahl, F. Schomm, L. Vomfell, G. Vossen: Marketplaces for Digital Data: Quo Vadis? Computer and Information Science 10 (4) 2017, 22–37.

Y. Lu, S. Dillon, K. Rastrick, G. Vossen: Assessing the Perceived Value of Cloud-based Technologies in Natural Disasters: The Case of New Zealand Emergency Management; Proc. 4th International Conference on Information and Communication Technologies for Disaster Management (ICT-DM) 2017, Münster, Germany, 1–8 (DOI: 10.1109/ICT-DM.2017.8275669).

N.T. Nguyen, G.A. Papadopoulos, P. Jedrzejowicz, B. Trawinski, G. Vossen (Eds.): Computational Collective Intelligence (Proc. 9th International Conference ICCI, Nicosia, Cyprus, September 2017; Part 1: LNAI

10448, Part 2: LNAI 10449, Springer International Publishing, 2017).

Th. Hoeren, G. Vossen: Softwareverletzung – Missverständnisse bei der Feststellung der Schutzfähigkeit von Computerprogrammen; Kommunikation & Recht (K&R) 2018, 79–84.

N. Pflanzl, G. Vossen: What do Business Process Modeling and Super Mario Bros. have in Common? A Games-perspective on Business Process Modeling; International Journal of Conceptual Modeling – Enterprise Modeling and Information Systems Architecture, February 2018, 69–76.

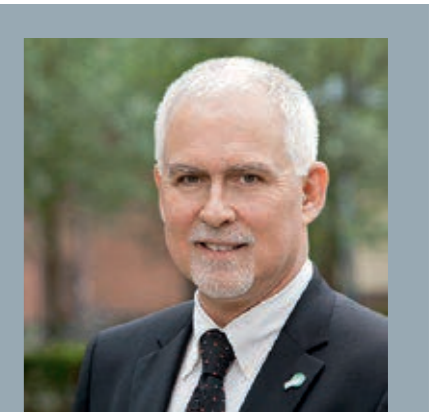
F. Buarque de Lima Neto, D. Martins, G. Vossen: A Semiotic-Inspired Machine for Personalized Multi-Criteria Intelligent Decision Support; Data & Knowledge Engineering 117, 2018, 225–238 (DOI: <https://doi.org/10.1016/j.datak.2018.07.012>).

St. Dillon, K. Rastrick, F. Stahl, G. Vossen: Using the Web While Offline: A Case Comparison; in: A. Elci (ed.): Handbook of Research on Contemporary Perspectives on Web-Based Systems, IGI Global, Hershey, PA, 2018, 108-124.

J. Lange, F. Stahl, G. Vossen: Datenmarktplätze in verschiedenen Forschungsdisziplinen: Eine Übersicht; Informatik-Spektrum 41 (3) 2018, 170–180.

L. Homann, B. Maleszka, D. Martins, G. Vossen: A Generic Framework for Collaborative Filtering Based on Social Collective Recommendation; N.T. Nguyen et al. (eds.): Computational Collective Intelligence (Proc. 10th International Conference (ICCCI) 2018, Part 1, Bristol, UK), Springer LNI 11055, 238–247.

D. Martins, G. Vossen, M. Maleszka: Supporting Online Data Purchase by Preference Recommendation; to appear in Proc. 2018 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2018), Miyazaki, Japan.



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D. Martins, G. Vossen, F. Buarque de Lima Neto: Discovering SQL Queries from Examples using Intelligent Algorithms; to appear in Proc. 5th IEEE Latin American Conference on Computational Intelligence (LA-CCI) 2018, Guadalajara, Mexico.

DISSERTATIONS

David Fekete: The Goal-Oriented Business Intelligence Architectures (GOBIA) Method: A Process-based Approach to Combine Traditional and Novel Analytical Technologies, University of Münster, Germany, 2018.

Fabian Schomm-von Auenmüller: Profiling Data and Beyond: Gaining Insights from Metadata, University of Münster, Germany, 2018.

VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS – DEPARTMENT OF INFORMATION SYSTEMS AND OPERATIONS MANAGEMENT

Vienna University of Economics and Business – Department of Information Systems & Operations Management <https://www.wu.ac.at/en/ipm/>



ABOUT THE INSTITUTION

Vienna University of Economics and Business (WU Vienna) is reportedly the biggest business school campus in Europe. The Department of Information Systems and Operations at WU Vienna was founded in the course of WU's organizational restructuring in 2005. Since then, it has consolidated the know-how and reputation of five highly renowned institutes and 16 professors with distinguished focuses in research and teaching, providing a broad representation of IS research topics. Our Bachelor's Program in Information Systems is recognized as Austria's leading degree programs in this field (according to Format Uni-Ranking, 2009). The established Master's Program in Information Systems ambitiously attempts to follow in these successful steps.

RESEARCH TOPICS

The department of Information Systems & Operations consists of five institutes. The **Institute for Information Business** conducts research in the area of business- and technology-driven innovations with a specific focus on business process management, data management, and knowledge management. The focus of the **Institute for Information Management and Control** is on responding to the needs of organizations and societies in regard to information and technology management, especially considering accountability. The research of the **Institute for Information Systems and New Media** emphasizes two major areas: new media, in particular computational media, active media, polymorphic media, and Information system, in particular highly

flexible systems and application engineering. The **Institute of Management Information Systems** aspires to use a wide range of methods to contribute to the development of sustainable technology aspects. The institute's aim is to be a think tank for business and society that focuses on the sustainable design of information technology. The **Institute for Production Management** is focusing on research in the area of supply-chain management.

CURRENT RESEARCH PROJECTS

In October 2017 the Institute for Information Business launched CitySPIN (<http://cityspin.net/>), a national research project funded by the Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT) and the Austrian Research Promotion Agency (FFG) under the program "ICT of the Future". Together with our partners, TU Wien, Wiener Stadtwerke and Semantic Web Company, in CitySPIN we aim to create a platform for cyber-physical social systems in order to facilitate innovative Smart City infrastructure services.

AWARDS

Two of our students received the WU Talenta award. The WU Talenta award recognizes the past year's best bachelor and master theses with a prize sponsored by the city of Vienna.

Bachelor thesis: *Christian Bruck*. Challenges and opportunities of Data Governance in private and public organizations. Supervised by Axel Polleres and Edward W. Bernroider.

Master thesis: *Julian Reindorf*. HDT Quads: Compressed Triple Store for Linked Data. Supervised by Javier D. Fernández and Axel Polleres.

Everist Limaj has received the prestigious Stephan Koren Award 2017 for his doctoral dissertation. His first and second supervisors were Edward Bernroider and Alexander Kaiser.

EVENTS

WU Vienna, together with the University of Vienna, is organizing the 17th International Conference on Business Process Management (BPM 2019) from 1–6 of September 2019. BPM 2019 is the premier international forum for the BPM community. BPM 2019 will bring together researchers, practitioners and industry specialists to discuss, advance, and shape the future of BPM. Beyond the three tracks of the main conference (theoretical foundations, engineering and management), BPM 2019 will additionally include an industry track, a Blockchain forum, and a Central Eastern European Forum to showcase BPM in this region, among others. Find more information at the conference website: <https://bpm2019.ai.wu.ac.at>

In June 2019, we will host the Austrian Computer Science Day (ACSD2019), cf. <http://acsd2019.ai.wu.ac.at/>. The Austrian Computer Science Day (ACSD) is an annual assembly that brings together computer scientists across and beyond Austria to improve visibility of the field and foster collaboration in research and teaching. This year's ACSD runs under the slogan "Busi-

ness meets Computer Science". The Austrian Computer Science Day 2019 takes place on Monday, 3 June, 2019, at WU Vienna.

On 17 and 18 April 2018, Axel Polleres and Sabrina Kirrane hosted the W3C workshop on data privacy controls and vocabularies (<https://www.w3.org/2018/vocabws/report.html>). The main objective was to discuss on the application of linked data techniques to help tackle the issue of privacy in modern data environments. The main result of the workshop was the creation of a novel W3C Data Privacy Vocabularies and Controls Community Group (<https://www.w3.org/community/dpvcg/>), co-chaired by Axel Polleres. This group will harmonize efforts and develop taxonomies of privacy terms, with a clear focus on GDPR.

Following an annual tradition, the institute for Information management and Control hosted the Practitioner Talks followed by an informal Get-Together. The event highlighted current topics and challenges in IS Management and Control from a practical perspective. In the summer term 2018, guest speakers from KPMG and Raiffeisen Bank International AG had the opportunity to talk about their experience with students attending our Specialization.

SELECTED PUBLICATIONS

Javier D. Fernández, Jürgen Umbrich, Axel Polleres, and Magnus Knuth. Evaluating Query and Storage Strategies for RDF Archives. In *Semantic Web Journal*, in press. Available at: <http://www.semantic-web-journal.net/content/evaluating-query-and-storage-strategies-rdf-archives-o>. 2018.

Javier D. Fernández, Sabrina Kirrane, Axel Polleres and Simon Steyskal. HDT crypt: Compression and Encryption of RDF Datasets. *Semantic Web Journal (SWJ)* 2018, in press. 2018.

Javier D. Fernández, Miguel A. Martínez-Prieto, Pablo de la Fuente Redondo, Claudio Gutiérrez: Characterizing RDF Datasets. *Journal of Information Science*, 44(2):203-229.

Fernández J.D., Martínez-Prieto M.A. RDF Serialization and Archival. In: Sakr S., Zomaya A. (eds) *Encyclopedia of Big Data Technologies*. Springer, Cham. 2018.

Martínez-Prieto M.A., Fernández J.D., Hernández-Illera A., Gutiérrez C. RDF Compression. In: Sakr S., Zomaya A. (eds) *Encyclopedia of Big Data Technologies*. Springer, Cham. 2018.

E. Kušen, M. Strembeck: Why so Emotional? An Analysis of Emotional Bot-generated Content on Twitter, In: Proc. of the 3rd International Conference on Complexity, Future Information Systems and Risk (COMPLEXIS), Funchal, Madeira, Portugal, March 2018.

E. Kušen, M. Strembeck: On the Public Perception of Police Forces in Riot Events – The Role of Emotions in Three Major Social Networks During the 2017 G20 Riots, In: Proc. of the 3rd International Conference on Complexity, Future Information Systems and Risk (COMPLEXIS), Funchal, Madeira, Portugal, March 2018.

E. Kušen, M. Strembeck: Politics, Sentiments, and Misinformation: An Analysis of the Twitter Discussion on the 2016 Austrian Presidential Elections, In: *Online Social Networks and Media (OSNEM)*, Vol. 5, March 2018.

Bauer, Michael, Höttl, Andrea, Brandtweiner, Roman. Greener households? The effectiveness of smart meters in reducing energy consumption levels in the DACH region. *International Journal of Sustainable Development and Planning*, 13 (2), 258-267. 2018.

Fichman, Pnina, Bernroider, Edward. Introduction to the Global, International, and Cross-Cultural Issues in IS Minitrack. In 51st Hawaii International Conference on System Sciences (HICSS), Hrsg. Tung X. Bui, 3626-3626. Hawaii: IEEE. 2018.

Limaj, Everist, Bilali, Edona. 2018. Big Data Systems: A Renewed Definition Of The Concept. In IADIS 2018, Hrsg. Miguel Baptista



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Nunes, Pedro Isaias and Philip Powell, 287-291. Lisbon, Portugal: IADIS Press.

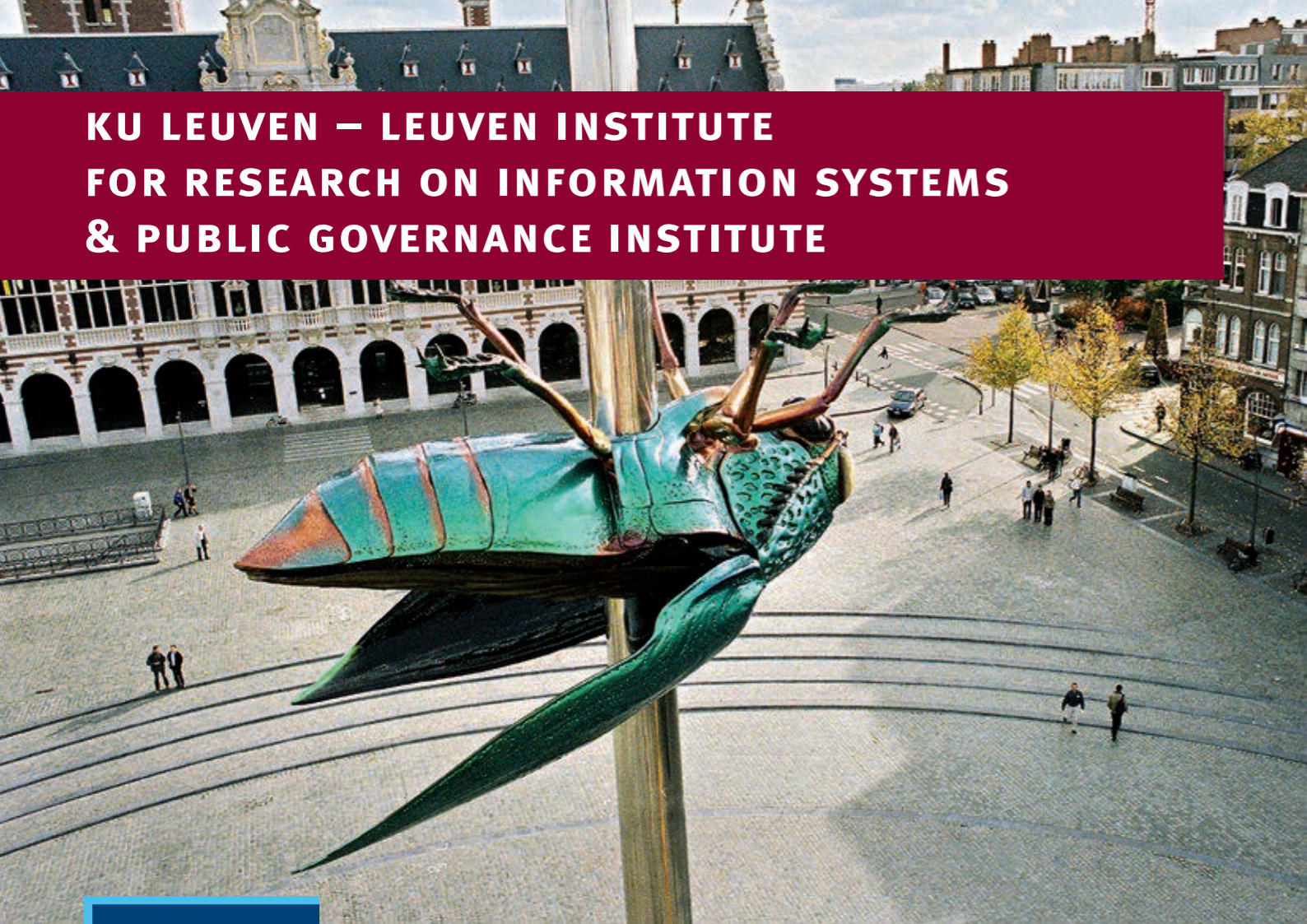
Limaj, Everist, Bilali, Edona. 2018. Examining Digital Technology Constrains on Higher Education in Developing Countries Through the Lens of the Capability Approach. In PACIS 2018, 1236-1247. Yokohama, Japan.

Walser, Roman, Virag, Peter. 2018. Being Controlled: Exploring Controllees' View On Control In IS Projects. IADIS 2018, 185-192. Lisbon, Portugal.

Walser, Roman, Bernroider, Edward. 2018. Factors Influencing Controllees' Congruence and Willingness to Comply with Control Mechanisms in IS Projects. In ECIS 2018.



KU LEUVEN – LEUVEN INSTITUTE FOR RESEARCH ON INFORMATION SYSTEMS & PUBLIC GOVERNANCE INSTITUTE



KU LEUVEN

ABOUT KU LEUVEN

Situated in Belgium, in the heart of Western Europe, KU Leuven has been a centre of learning for nearly six centuries. Today, it is Belgium's largest university and, founded in 1425, one of the oldest and most renowned universities in Europe. KU Leuven is a research-intensive, internationally oriented university that carries out both fundamental and applied research. It is strongly inter- and multidisciplinary in focus and strives for international excellence.

Following the integration of the university colleges, the 'entire' KU Leuven counted **51,771 students** as of October 2016. The largest student populations are found in the faculties of Economics and Business, Medicine, Engineering Technology, Arts, and Law. Students from approximately 150 countries study at KU Leuven.

LIRIS

The Leuven Institute for Research in Information Systems (LIRIS), founded in 1987, coordinates research in the area of information technology and management in organizations. This research embodies: fundamental issues of information systems in organizations, applied research, and research on the use and implications of information systems throughout society. The LIRIS Faculty currently counts 7 professors, 1 postdoc and around 15 PhD researchers.

PUBLIC GOVERNANCE INSTITUTE

The KU Leuven Public Governance Institute has as the mission to gain knowledge and insight regarding politics, administration and public policies on local, regional, federal, European and international levels. We intend to make scientific contributions to an improvement in the policy-making, organization and management of public administrations.

The KU Leuven Public Governance Institute is an internationally oriented and interdisciplinary research institute that focusses

on different aspects of public governance. Both fundamental and applied research are part of our activities, with special attention to theory, empirical research and practice. Comparative research in particular is one of our core competencies.

RESEARCH TOPICS

The research focuses on the entire trajectory of assessing the as-is business situation (through discovery, analysis, mining), modelling the concepts, improving the model to obtain the to-be situation, and engineering the model to an implementation. This integrated approach of models, rules, decisions, processes, structures and is referred to as Business Engineering. It combines knowledge from the fields of business administration as well as information technology and relates it to the transformation from the industrial society into an information society, where creation, integration, processing, management and use of information and knowledge is a significant economic activity.

Important research topics of LIRIS are:

- analysis, modelling and architecture of information systems;
- knowledge discovery, data and process mining;
- architecture and infrastructure;
- data, process and decision modelling;
- business data, process, service, rules and decision management;
- information strategy.

Public Governance Institute focuses on three distinguishable but partly overlapping clusters within the public governance domain:

- **Politics, citizens and policies:** this research cluster focuses on the understanding of the relationship between governments, citizens and policy practices.
- **Administrative organization and HRM:** this cluster focuses on the changes in the governmental landscape and the way in which the government handles its human capital.

- **Management of information, performance and finance:** this cluster focuses on research about methods and approaches to manage, use and exchange information by governments in the policy, management and financial cycles. This may be within as well as between administrative organizations, but also across and between governments.

CURRENT RESEARCH PROJECTS
Research projects within LIRIS are conducted in four major areas:

Engineering information solutions
Engineering information solutions, dealing with conceptual modelling, data quality and requirements management is a first important area. It allows creating innovative solutions, based on sound modelling

principles and aligned with the business. Example:

- KBC Research Chair, A Data Quality Framework for Effective Risk Data Aggregation and Risk Reporting, 2015–2019.

Business processes intelligence

A second important area is the area of business processes intelligence. This includes some important new contributions to the theory of process analytics and discovery, and applies process analytics to some specific new domains (auditing, learning, service, customers and administrative processes), giving rise to auditing analytics, e-learning analytics, service analytics, etc. - New techniques in Process Analytics, 2015–2019.

Business decision management

Business decision management (modelling, mining and implementing decision representations and business rules) is an area with a long tradition in LIRIS. The research recently led to an industry standard, DMN (Decision Model & Notation), adopted by the OMG.

- TETRA (Technology Transfer) project, Decision Analytics, 2017–2019.

Business Analytics & Data Science

In close collaboration with a world-wide network of companies and fellow researchers, we study various research topics within the field of data science. Another key research track concerns the development of social network based analytical models for fraud detection, credit risk modelling and marketing analytics (e.g. churn prediction).

- Fund for Scientific Research – Flanders (F.W.O.-Vlaanderen), Profit-driven Analytics: new techniques and applications, 2017–2020.

Recent research projects of Public Governance Institute are:

- A Digital Flemish Government (DigiVO) – Policy Research Centre Innovative Governance of the Flemish government (2016-2020).

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LIRIS



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- FLEXPUB – Next generation of flexible public services – the geospatial case (BELSPO – BRAIN)(2016-2020).
- its4land Geospatial technology innovations for land tenure security in East-Africa (Ethiopia, Kenya, Rwanda) EU Horizon 2020, ICT-39-2015, (2016-2020)
- Governance for effective Spatial Data Infrastructures (NWO)(2015-2018).
- Terra Mosana, Interreg V Euregion Meuse – Rhine, Belgium, Germany, The Netherlands (2018-2021)
- SLICE3D – Slovenian Centre of Excellence on 3D geodata, Slovenia, University of Ljubljana, EU Horizon 2020 Teaming Instrument

KU LEUVEN – LEUVEN INSTITUTE FOR RESEARCH ON INFORMATION SYSTEMS & PUBLIC GOVERNANCE INSTITUTE

› KU Leuven – Faculty of Economics and Business <http://feb.kuleuven.be>

KU LEUVEN

LIRIS RESEARCH CHAIRS WITH INDUSTRY

The Business Information Systems group has a long tradition in industry-funded research chairs. This partnership with industry is a strong valorization of the research efforts and a good source of relevant research questions. Some current research chairs in business processes, decisions and information management:

Colruyt-Symeta Research Chair: Smart Data and Decisions in Marketing

KBC Research Chair: A Data Quality Framework for Effective Risk Data Aggregation and Risk Reporting

Coca Cola Research Chair on Gaining Business Value out of Big Data and Predictive Analytics

Bpost Bank Research Chair on ACT: Actionable Customer Analytics

VDAB Research Chair on CARMA: CAReer Management Analytics

EDUCATION

Erasmus+: Higher Education Joint Master Degrees – Master of Science in Public Sector Innovation and eGovernance together with Westfälische Wilhelms-Universität Münster – University of Münster and Tallinn University of Technology

PIONEER

Under the EU Erasmus+ flag, KU Leuven, the University of Münster and Tallinn University of Technology have launched a new Erasmus Mundus Master of Science in Public Sector Innovation and eGovernance this year. This new 2-year master programme is unique in its kind, because of its international profile and interdisciplinary nature, where students will receive a solid background in the field of public administration (Leuven), information systems (Münster) and digital government (Tallinn).

BESTSDI – Western Balkans Academic Education Evolution and Professional's Sustainable Training for Spatial Data Infrastructures. Erasmus+ Cooperation for innovation and the exchange of good practices

JOURNAL PUBLICATIONS

Predicting tax avoidance by means of social network analytics, *Jasmien Lismont, Eddy Cardinaels, Liesbeth Bruynseels, Sander De Groote, Bart Baesens, Wilfried Lemahieu, Jan Vanthienen*, Decision Support

Systems108: 13-24 (2018).

Isolation-based conditional anomaly detection on mixed-attribute data to uncover workers' compensation fraud, *Eugen Stripling, Bart Baesens, Barak Chizi, Seppe vanden Broucke*, Decision Support Systems 111: 13-26 (2018).

On the operational efficiency of different feature types for telco Churn prediction, *Sandra Mitrovic, Bart Baesens, Wilfried Lemahieu, Jochen De Weerd, Estefanía Serral, Jan Vanthienen*, Inf. Syst. 74(Part): 40-52 (2018).

Predicting interpurchase time in a retail environment using customer-product networks: An empirical study and evaluation, *Jasmien Lismont, Sudha Ram, Jan Vanthienen, Wilfried Lemahieu, Bart Baesens*, Expert Syst. Appl. 104: 22-32 (2018).

Time series for early churn detection: Using similarity based classification for dynamic networks, *Maria Oskarsdottir, Tine Van Calster, Bart Baesens, Wilfried Lemahieu, Jan Vanthienen*, Expert Syst. Appl. 106: 55-65 (2018).

Benchmarking sampling techniques for imbalance learning in churn prediction, *Bing Zhu, Bart Baesens, Aimée Backiel, Seppe K. L. M. vanden Broucke*, JORS 69(1): 49-65 (2018).

Evaluating recommendation and search in the labor market, *Michael Reusens, Wilfried Lemahieu, Bart Baesens, Luc Sels*, Knowl.-Based Syst. 152: 62-69(2018).

Profit maximizing logistic model for customer churn prediction using genetic algorithms, *Eugen Stripling, Seppe vanden Broucke, Katrien Antonio, Bart Baesens, Monique Snoeck*, Swarm and Evolutionary Computation 40: 116-130 (2018).

Augmenting processes with decision intelligence: Principles for integrated modeling, *Faruk Hasic, Johannes De Smedt, Jan Vanthienen*, Decision Support Systems 107: 1-12 (2018).

Discovering hidden dependencies in constraint-based declarative process models for improving understandability, *Johannes De Smedt, Jochen De Weerd, Estefanía Serral, Jan Vanthienen*, Inf. Syst. 74(Part): 40-52 (2018).

Entering data correctly: An empirical evaluation of the theory of planned behaviour in the context of manual data acquisition, *Tom Haegemans, Monique Snoeck, Wilfried Lemahieu*, Rel. Eng. & Sys. Safety 178: 12-30 (2018).

Incorporating negative information to process discovery of complex systems, *Hernán Ponce de León, Lucio Nardelli, Josep Carmona, Seppe K. L. M. vanden Broucke*, Inf. Sci. 422: 480-496 (2018).

Prod-users of geospatial information: some legal perspectives. *Cho, G. and Crompvoets*, 2018, Journal of Spatial Sciences. 2018: 1-18.

The INSPIRE Directive: some observations on the legal framework and implementation. *Cho, G., and Crompvoets*, 2018, Survey Review. March 2018, 1-8.

Governance of national spatial data infrastructures in Europe. *Crompvoets, J., Vancouwenberghe, G., Ho, S., Masser, I., and de Vries, W.T.*, 2018. International Journal of

Spatial Data Infrastructures Research, 13: 253-285.

Evolving government processes for service delivery: Identifying types and Impact. *Heijnen, R., Crompvoets, J., Bouckaert, G., and Chantillon, M.*, 2018, Administrative Sciences (accepted).

3D Geo-information Innovation in Europe's Public Mapping Agencies: A Public Value Perspective. *Ho, S., Crompvoets, J. and Stoter, J.*, 2018, Land 2018, 7(2): 61.

Needs Assessment in Land Administration: The Potential of the Nominal Group Technique. *Ho, S., Pattyn, V., Broucker, B., and Crompvoets, J.*, 2018, Land 2018, 7(3): 87.

State and development of local spatial data infrastructures in Croatia. *Marasović, S., Crompvoets, J. and Poslončec-Petrić, V.*, 2018, Journal of Spatial Science, 2018: 1-18.



Kruse, J., Crompvoets, J., and Pearlman, F., 2017. GEOValue – The Socioeconomic Value of Geospatial Information. CRC Press,

Quantifying the social and economic value that geospatial information contributes to modern society is a complex task. To construct reliable and consistent valuation measures requires an understanding of the sequence of processes that starts with data acquisition and leads to decision-makers' choices that impact society. This book explores each step in this complex value chain from the viewpoint of domain experts spanning disciplines that range from the technical side of data acquisition and management to the social sciences that provide the framework to assess the benefit to society. The book is intended to provide foundational understanding of the techniques and complexities of each step in the process.

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DISSERTATIONS

26.01.2018, *Jasmien Lismont*, "From bit to business: Addressing managerial and practical challenges of analytics adoption".

30.04.2018, *Michael Reusens*, "Towards a better understanding of recommender system in the labor market".

22.06.2018, *Tine Van Calster*, "A matter of time – leveraging time series data for business applications".

BOOKS

Kruse, J.B., Crompvoets, J., and Pearlman, F., 2017. GEOValue: The Socioeconomic Value of Geospatial Information. CRC Press, Boca Raton, United States, 332 pp.



CHARLES UNIVERSITY IN PRAGUE – FACULTY OF MATHEMATICS AND PHYSICS – DEPARTMENT OF SOFTWARE ENGINEERING



ABOUT THE INSTITUTION

The natural sciences have been a part of the research teaching at the Charles University since its founding in 1348.

The Faculty of Mathematics and Physics has been created by separating a part of the Faculty of Natural Sciences on 1 September 1952. Now, it is composed of three schools: School of Physics, School of Mathematics, and School of Computer Science.

The School of Computer Science at the Faculty of Mathematics and Physics includes eight prestigious teaching and scientific workplaces. The quality of their graduates is widely recognized. Among them are a number of top experts working as computer program developers and technological innovators. They are also successful as entrepreneurs. Members of the School of Computer Science achieve outstanding scientific results in discrete mathematics, especially in graph theory and its application in intelligent systems, optimization, programming methods, semantics and building large software systems, processing natural language and many others.

The Department of Software Engineering is focused on research and teaching in the areas of database systems, semantic web, similarity search, Bioinformatics & Chem-



informatics, XML technologies, parallel computing, Big Data, and e-Science.

RESEARCH TOPICS

There are three research groups in the department:

Similarity RETrieval Research Group (SiRet)

<http://siret.ms.mff.cuni.cz/>

SiRet was founded in 2006 at the Department of Software Engineering, Faculty of Mathematics and Physics, Charles University in Prague. SRG deals with database methods for efficient and effective similarity search in databases of complex unstructured objects. In particular, SRG is interested in three areas - general methods

of indexing similarity (metric and nonmetric spaces), biological applications of the similarity search, indexing image databases for content-based retrieval, and now Bioinformatics & Cheminformatics.

XML and Web Engineering Research Group (XRG)

<http://www.ksi.mff.cuni.cz/xrg/>

The XML and Web Technologies Research Group (XRG) focuses on XML and Web technologies and their exploitation, service-oriented architectures (design, implementation, and management), evolution, change management as well as adaptability of applications, efficient processing of graph data (XML, RDF, linked data), ontolo-

gies, Web 2.0, and semantic web services. Recently, the Big Data and Linked data research is currently at the forefront of the group.

Parallel Architectures/Algorithms/Applications Research Group (PARG)

<http://www.ksi.mff.cuni.cz/parg/>

The Parallel Architectures/Algorithms/Applications Research Group focuses on multi-core CPUs and NUMA servers programming, many-core GPUs and GPGPU computing, utilization of emerging parallel architectures (Intel MIC, Parallela/Epiphany), distributed computing on tightly coupled clusters, parallel data processing, concurrency in database systems, and languages (and compilers) for parallel processing.

CURRENT RESEARCH PROJECTS

The department members are involved in a number of research projects funded by the Czech Science Foundation and the Technology Agency of the Czech Republic. The projects concern Bioinformatics & Cheminformatics, e.g. Molpher (Software tool for exploration of the chemical space), P2RANK (Ligand-binding site prediction), P3S (Protein structure similarity search), and others, as well as Multimedia, e.g. Find the image (Online tool for comparisons of different multimedia exploration approaches), Multimedia exploration framework (Creation of efficient multimedia exploration applications), and others.

AWARDS

1st place at the Video Browser Showdown 2018 (05.02.2018). The team from SIRET has won the 7th Video Browser Showdown competition organized at the 24th International Conference on Multimedia Modeling in Bangkok.

PUBLICATIONS

R. Krivák, D. Hoksza: P2Rank: machine learning based tool for rapid and accurate prediction of ligand binding sites from protein structure. *J. Cheminformatics* 10(1): 39:1-39:12 (2018).

D. Hoksza, P. Gawron, M. Ostaszewski, R. Schneider MolArt: A molecular structure annotation and visualization tool. *Bioinformatics*, 2018, 1–2.

Maršik L., Martišek P., Pokorný J., Rusek M., Kateřina S., Jan M., Matthias R., Pierre H., Yann B.: KaraMIR: A project for cover song identification and singing voice analysis using a karaoke songs dataset, in *International Journal of Semantic Computing*, Vol. 12, Num. 3, 2018.

Pokorný, J. Valenta, M., Troup, M.: Indexing Patterns in Graph Databases. In: *Proceedings of the 7th International Conference on Data Science, Technology and Applications (DATA 2018)*, Eds. J. Bernardino and Ch. Quix, SCITEPRESS – Science and Technology Publications, Lda., pp. 313-321.

Pokorný, J.: Integration of Relational and NoSQL Databases. In: *Intelligent Information and Database Systems, ACIIDS 2018, Part II*, LNCS 10752, Nguyen N., Hoang D., Hong TP., Pham H., Trawiński B. (eds), Part 2, pp. 35-45, 2018.

Knap, T., Hanecák, P., Klímek, J., Mader, Ch., Necaský, M., Van Nuffelen, B., Skoda, P.: UnifiedViews: An ETL tool for RDF data management. *Semantic Web* 9(5): 661-676 (2018).

Skopal, T., Peska, L., Holubová, I., P. Paschenko, P., Hucín, J.: Advanced Analytics of Large Connected Data Based on Similarity Modeling. *SISAP 2018*: 209-216.

Míšek J., Zavoral F.: Semantic Analysis of Ambiguous Types in Dynamic Languages, in *Journal of Ambient Intelligence and Humanized Computing*, Vol. 9, Num. 9/2, ISSN: 1868-5137, pp. 1-13, 2018.



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COPENHAGEN BUSINESS SCHOOL – DEPARTMENT OF IT MANAGEMENT (ITM)

> Copenhagen Business School – Department of Information Technology Management (ITM) www.cbs.dk/digi



**Copenhagen
Business School**
HANDELSSHØJSKOLEN

ABOUT THE INSTITUTION

The **Department of Digitalization (DIGI)** is one of the largest IT Management departments in Europe. DIGI is a multi-disciplinary department that embraces theories and methods from the fields of information systems, business administration, computer science, organization studies, political science, economics, sociology, psychology, and communication theory. The mission statement of the department is: Co-creating knowledge with enduring consequences through the study of the interrelationships among people, information and technology.

The Association of Information Systems (AIS) is the core community of the department. The AIS community is inclusive and open to all the current research areas of the department. With our journal contributions to the Senior Scholars' Basket of Journals we are ranked number two in Europe.

Other communities are also relevant, e.g., human-computer interaction, e-government, organization studies, learning sciences, and software design and development.

We strive for a high level of collaboration with representatives from industry and society (also called engaged scholarship) while also organizing our research to accommodate for the fast-moving pace and

radical innovation that characterizes the IS research field. We achieve this by organizing part of our research around themes that address societal or business challenges. The themes are topical, popular, inter-disciplinary and dynamic in nature. In addition to the research themes, DIGI still maintains the more traditional research areas for the disciplinary development of its researchers.

The faculty and administrative staff of the department are primarily teaching within the following degree programs: Bachelor in Business Administration and Information Systems, Bachelor in Information Management, MSc in Business Administration and Information Systems and the MSc in IT (eBusiness).

RESEARCH TOPICS

The Department of Digitalization conducts research within the following research areas related to information technology and information systems: Design, Implementation, Use and exploitation and Information management.

The research at DIGI is organized around a number of cross disciplinary themes and we cover a number of research areas like the sharing economy, future of work, mergers & acquisition, social media, cashless society, internet of things, or open big data.

Themes are emergent, topical, inter-disciplinary and dynamic in nature. They emerge from bottom up activities where researchers find that they share a common excitement about a new phenomenon and encompass several tenured faculty members who meet regularly about a common research phenomenon over a longer period of time.

Example Research Theme IoT. The group 'Internet of Things' (IoT) has the objective to create an Internet of People and Societies by creating multidisciplinary and cross-disciplinary approaches with researchers, politicians, citizens, NGO's and enterprises pursuing socially productive scenarios in the merging of our physical world and the virtual world.

CURRENT RESEARCH PROJECTS

BPM-Online. In this EU project, CBS participates in the development of an EU reference curriculum for business process management. CBS's focus is on the challenges and the role of BPM with regards to organizational flexibility, innovation and employee's expertise.

Center for Business Data Analytics. The Center for Business Data Analytics (cbsBDA) celebrates its first year at the Department of Digitalization of the Copenhagen Business School. It conducts transdisciplinary basic research at the socio-technical inter-

sections of computer science and social science with specific applications to managers in companies, teachers in schools and residents in cities.

Big Social Data Analytics. CBS DIGI received a 6.2 m DKK grant from the Danish Industry Foundation and starts a research project on big social data analytics. The research project is case based and can, by building new analytical models that collect big data streams from company databases, websites and social media such as Facebook, Instagram, Pinterest, Twitter and LinkedIn, provide companies with necessary algorithmic approaches to address current business challenges.

Cashless Society. The vision behind "Cashless Society" is to make Denmark the first cashless society in the world. Compared with the rest of the world, the Danish based entirely unique, and the cashless society will only further strengthen Denmark's international competitiveness. The idea of a cashless society leads to a number of issues and challenges that will be explored and investigated. Some of the key research questions are: How does the digitization of money affect the use and experience of money? How does the digitization of transactions influence the performance of and preference for different payment systems? How can we design a digitized payment ecosystem? The complexity in the challenges requires us to apply multi methodological approach ranging from anthropological studies, field studies, experiments, and design science in close collaboration with practice, including, including The Danish Bankers Association, NETS, Dansk Bank, Cell Point Mobile, IBM, and Innovation Lab.

PUBLICATIONS

Erol Kazan; Chee-Wee Tan; Eric T. K. Lim; Carsten Sørensen; Jan Damsgaard / Disentangling Competition Among Platform Driven Strategic Groups : A Comparative Case Study of UK Mobile Payment Platforms. In: Journal of Management Information Systems, Vol. 35, No. 1, 2018, p. 180-219.

Suprateek Sarker; Xiao Xiao; Tanya Beaulieu; Allen S. Lee / Learning from First-generation Qualitative Approaches in the IS Discipline : An Evolutionary View and Some Implications for Authors and Evaluators (PART 1/2). In: Journal of the Association of Information Systems (JAIS), Vol. 19, No. 8, 2018, p. 752-774.

Richard Baskerville; Abayomi Baiyere; Shirley Gregor; Alan Hevner; Matti Rossi / Design Science Research Contributions : Finding a Balance between Artifact and Theory. In: Journal of the Association of Information Systems (JAIS), Vol. 19, No. 5, 2018, p. 358-376.

Riitta Hekkala; Mari-Klara Stein; Matti Rossi / Metaphors in Managerial and Employee Sensemaking in an Information Systems Project. In: Information Systems Journal, Vol. 28, No. 1, 2018, p. 142-174.

Ferdinand Thies; Michael Wessel; Alexander Benlian / Network Effects on Crowdfunding Platforms : Exploring the Implications of Relaxing Input Control. In: Information Systems Journal, 16.4.2018.

Thomas Jensen; Ravi Vatrapu; Niels Bjørn-Andersen / Avocados Crossing Borders : The Problem of Runaway Objects and the Solution of a Shipping Information Pipeline for Improving International Trade. In: Information Systems Journal, Vol. 28, No. 2, 3.2018, p. 408-438.

Adrian Yeow; Christina Soh; Rina Hansen / Aligning with New Digital Strategy : A Dynamic Capabilities Approach. In: Journal of Strategic Information Systems, Vol. 27, No. 1, 3.2018, p. 43-58.

Yang Chen; Christy M. K. Cheung; Chee-Wee Tan / Omnichannel Business Research : Opportunities and Challenges.

Robert D. Galliers; Mari-Klara Stein / Information Systems : To Be, or Not to Be, a Science? Is that the Question? In: Communications of the Association for Information Systems, Vol. 43, No. 1, 2018, p. 197-204.



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Hongxiu Li; Lirui Li; Chunmei Gan; Yong Liu; Chee-Wee Tan; Zhonghua Deng / Disentangling the Factors Driving Users' Continuance Intention towards Social Media : A Configurational Perspective. In: Computers in Human Behavior, Vol. 85, 8.2018, p. 175-182.

Till J. Winkler; Petteri Kettunen / Five Principles of Industrialized Transformation for Successfully Building an Operational Backbone. In: MIS Quarterly Executive, Vol. 17, No. 2, 2018, p. 123-140.

TAL TECH

ABOUT THE INSTITUTION

The Ragnar Nurkse Department of Innovation and Governance (RND) under the School of Business and Governance was established in 1992 and was called Department of Public Administration until 2012. RND is the largest and most international Public Administration teaching and research center in Estonia, having approximately 30 staff members. RND has over 500 students and is the only higher education research center in Estonia that teaches Public Administration on all three levels: BA, MA, and PhD.

RND is a part of TalTech – Tallinn University of Technology is the only university focusing on engineering and technology in Estonia. As of September 17, Tallinn University of Technology will adopt a new short name TalTech. Introduction of the new short name in the university's 100th anniversary year marks the end of one development phase and the arrival of the next century. The short name TalTech has been in use for several projects within the University for some time now, but now it will receive a fresh form and become the official short name of the university both in Estonia and internationally. The TalTech campus is also a home to more than 200 high-tech companies (e.g. Skype). The mission of Tallinn University of Technology is to be a promoter of science, technology and innovation and a leading provider of engineering and economic education in Estonia.

RESEARCH TOPICS

RND integrates effectively its two main re-

search fields: (1) Public Administration and Management and (2) Innovation Policy and Technology Governance leading to a rather unique research profile.

Throughout the two fields, RND specializes uniquely into interdisciplinary research at the crossroads of public policy and implementation. Our research looks at how policies are implemented and how the implementation processes feedback into policymaking and in fact change policies. RND deals with evolutionary changes in policy and implementation practices. This approach can be applied to any area of policymaking and indeed to any area of human activity where governments have any role to play.

The main research topics of RND are:

- Innovation, innovation strategies, innovation policies, and economic development (Technology Governance);
- Governance, public management reforms, and catching-up processes;
- E-government and e-governance;
- Small states and public management;
- Small states and innovation policy & development;
- Financial policies and economic development;
- Regional policy and regional development;
- Philosophy of science.

CURRENT RESEARCH PROJECTS

RND coordinates one of the largest public sector innovation pilots of the Horizon2020 Program: The Once-Only Principle

Project, acronym TOOP. The project started in January 2017 and lasts until June 2019 (30 months) having a budget of 8 Million Euros. TOOP is an innovative action that explores and demonstrates the implementation of the “once-only” principle on a cross-border scale with the aim to reduce the administrative burden for businesses and public administrations. It contributes to the EU digital single market by developing a generic federated architecture that is able to connect registries and e-government architectures in different countries. This architecture is tested and refined through pilot projects in three domains: 1) cross-border e-services for business mobility; 2) connected company data; 3) online ship and crew certificates. TOOP involves 50 partners from 21 countries. Next to management, RND is involved in the identification of the barriers related to cross-border data exchange and impact assessment. TalTech's Department of Software Science leads the task of IT architecture development.

RND is one of the twelve partners in the Horizon2020 project OpenGovIntelligence, acronym OGI. The project with a full name “Fostering Innovation and creativity in Europe through Public Administration Modernization towards supplying and Exploiting Linked Open Statistical Data” started in February 2016 and ends in January 2019 (36 months). OGI has a total budget of 2.8 million Euros, from which 227,500 are allocated to RND. The OpenGovIntelligence project aims at stimulating sustainable economic growth in Europe through foster-

ing innovation in society and enterprises. Towards this end, OGI suggests a holistic approach for the modernization of public administration by exploiting linked open statistical data technologies. This includes new business processes, policies and tools that will enable the active participation of the society and enterprise in data sharing in the coproduction of innovative data-driven public services.

Professor Robert Krimmer leads the Estonian Research Council Personal Research Funding project: “Internet Voting as Additional Channel for Legally Binding Elections: Challenges to Voting Process Reengineering”. The project's duration is 48 months – 1 January 2017 until 31 December 2020 - and has a budget of 50,000 Euros. With general decline of voter turnout in established democracies around the world, a number of countries have started to look into adding alternative means of voting, including internet and postal voting resulting in complex multi-channel elections. The aim of this project is to conduct empirical research into why such offerings are being undertaken and how they influence and change the voting process and governance thereof, as well as answering the question of how the adding-removing of internet voting and other channels affects the overall costs thereof.

PUBLICATIONS

Aavik, G.; Mayer, A.; McBride, K.; Krimmer, R. (2019). Is Government Welfare Able to Change? Analysing Efforts to Co-create an Improved Social Welfare System through Taking Advantage of a Collaborative Economy. 52nd Hawaii International Conference on System Sciences (HICSS), 8-11 January, 2019. IEEE Computer Society Press.

McBride, K.; Aavik, G.; Kalvet, T.; Krimmer, R. (2018). Co-creating an Open Government Data Driven Public Service: The Case of Chicago's Food Inspection Forecasting Model. 51st Hawaii International Conference on System Sciences (HICSS), 3-7 January, 2018. IEEE Computer Society.

McBride, K.; Matheus, R.; Toots, M.; Kalvet, T.; Krimmer, R. (2018). The Role of Linked Open Statistical Data in Public Service Co-Creation. In: Ojo, A.; Kankanhalli, A.; Soares, D. (Ed.). Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance (679–681), National University of Ireland Galway, 2018. Galway, Ireland.

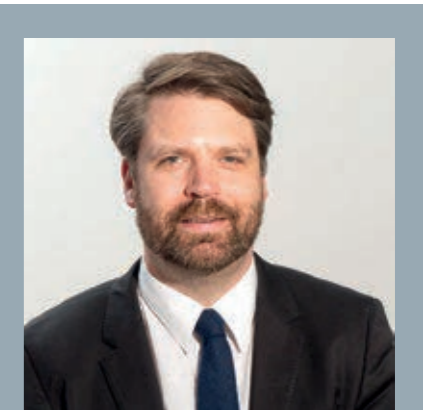
Kalvet, T.; Toots, M.; Van Veenstra, A. F.; Krimmer, R. (2018). Cross-border e-Government Services in Europe: Expected Benefits, Barriers and Drivers of the Once-Only Principle. In: Ojo, A.; Kankanhalli, A.; Soares, D. (Ed.). Proceedings of the 11th International Conference on Theory and Practice of Electronic Governance (69–72). Galway, Ireland.

McBride, K.; Kalvet, T.; Toots, M.; Krimmer, R. (2018). Open Government Data Driven Co-Creation, Moving Towards Citizen-Government Collaboration. IFIP EGOV-CeDEM-ePart 2018 Proceedings: EGOV-CeDEM-ePart 2018, Danube University Krems, September, 2018. Springer.

Kalvet, T.; Toots, M.; Krimmer, R. (2018). Contributing to a Digital Single Market for Europe: Barriers and Drivers of an EU-wide Once-Only Principle. In: Zuiderwijk, A.; Hinnant, C. C. (Ed.). dg.o '18: dg.o 2018: Proceedings of the 19th Annual International Conference on Digital Government Research. Delft, Netherlands.

McBride, K.; Toots, M.; Kalvet, T.; Krimmer, R. (2018). Turning Open Government Data into Public Value: Testing the COPS Framework for the Co-Creation of OGD-Driven Public Services. In: M. P. Rodriguez Bolivar, K. J. Bwalya, C. Reddick (Ed.). Governance Models for Creating Public Values in Open Data Initiatives. Springer.

Krimmer, R.; Duenas-Cid, D.; Krivososova, J.; Vinkel, P.; Koitmaa, A. (2018). How Much Does an e-Vote Cost? Cost Comparison per Vote in Multichannel Elections in Estonia. In: Krimmer, R., Volkamer, M., Cortier, V., Goré, R., Hapsara, M., Serdült, U., Duenas-



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Cid, D. (Ed.). Electronic Voting Third International Joint Conference, E-Vote-ID 2018 Bregenz, Austria, October 2–5, 2018 Proceedings (117–132). Cham: Springer.

DISSERTATIONS

Noella Edelmann (2017) Online Lurking: Definitions, Implications, and Effects on E-participation.
Supervisor: Professor Robert Krimmer, Professor Peter Parycek (Danube University, Krems).

UNIVERSITY OF TURKU – TURKU SCHOOL OF ECONOMICS – INSTITUTE OF INFORMATION SYSTEMS SCIENCE

› University of Turku – Turku School of Economics – Institute of Information Systems Science www.utu.fi



ABOUT THE INSTITUTION

The roots of the Institute for Information Systems Science were established in year 1971. Nowadays the Institute is a part of the Department of Management and Entrepreneurship at the University of Turku. The mission of the Institute is to educate professionals, who master both, general management, as well as Information Systems skills. In research, the Institute focuses on supporting companies in their Information Systems management. Issues at individual, industry, national and international level are not neglected. The Institute has been a pioneer in English-speaking education, even at the whole university level.

RESEARCH TOPICS

Information Systems Science completes the sphere of Information Sciences at the University of Turku adding to the more technically and natural science-oriented work at the Department of Future Technologies. Research widely covers the topic spectrum of Information Systems Science, with a gravity point in Information and Network Management in the Information Economy. Topics such as management of information resources, health care information systems and network-based services (e-services) – including Social Media – belong to the core areas of research, as well as topics on work informatics, ICT eth-

ics, usability issues, and management of ICT in small and medium-sized business.

CURRENT RESEARCH PROJECTS

The institution runs a rich portfolio of projects in different areas. Current examples contain issues such as Business Strategy, digital strategy, governance and management of IT, governance of data, data integration and federation, blockchain and distributed ledger technologies, IT management best practices; CIO/CDO work, ICT in small and medium sized enterprises, process modeling, master and reference data management, preparing for the health social services renewal in Finland, information system continuity management, management of waste flows, ethical issues within IT, behavioral and social aspects of digital and social media, adoption and diffusion of technological innovations, young people & information technology, freemium business models, virtual worlds, networks and business models, gender in ICT education and hospitality management.

EVENTS

In 2018 the University of Turku continued hosting the Kilpisjärvi Information Systems Seminar, one of the oldest continuing IS seminars established in 1990.

In 2018 the University of Turku continued hosting the Well-Being in the Information Society Conference Series. This year's conference, subtitled "Fighting Inequalities" took place from 27th to 29th August."

PUBLICATIONS

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China: A perspective on uses and gratifications. Computers in Human Behaviour 78, 306-315.

Marikka Heikkilä, Harry Bouwman, Jukka Heikkilä, (2018) "From strategic goals to business model innovation paths: an exploratory study", Journal of Small Business and Enterprise Development, Vol. 25 Issue: 1, pp.107-128, <https://doi.org/10.1108/JSBED-03-2017-0097>

H Li, L Li, C Gan, Y Liu, CW Tan, Z Deng (2018) Disentangling the factors driving users' continuance intention towards social media: A configurational perspective. - Computers in Human Behavior 85, 175-182.

Darius Pacauskas, Risto Rajala, Mika Westertlund, Matti Mäntymäki (2018) Harnessing user innovation for social media marketing: Case study of a crowdsourced hamburger. International Journal of Information Management 43, 319-327.

Suomi, Reima – Müller, Oliver – vom Brocke, Jan (2018) Hospital-wide Process-oriented Organization of Care – The Case of Turku University Central Hospital. Journal of Information Technology Theory and Application 18(2).

DISSERTATIONS

Olli Heimo. Icarus, or the Idea Toward Efficient, Economical, and Ethical Acquirement of Critical Governmental Information Systems.

Päivi Hokkanen. Essays on the tasks and the role of chief information officers.

Farooq Mubarak. Rethinking the digital divide: Emerging challenges in new global economy.

Jose Teixeira. Coopetition in an open-source way – Lessons from the mobile and cloud computing industries.

Ping Wang. Understanding electronic word-of-mouth in tourism in the social media era.

INSTITUTION AT A GLANCE

The University of Turku is a multidisciplinary scientific university located at the Southwest coast of Finland, in the vibrant student city of Turku. With over 23,000 students and 3,500 employees, the University of Turku is one of the largest universities in Finland. The Institute for Information Systems has three full professors and a total staff of about 25 employees with approximately 20 active doctoral level students. The yearly admission for students to the bachelor level, having Information Systems science as their major subject, is around 15 of the annual admission of 250 of the whole Business School. Yearly, in addition, there are approximately 40 master level students in the two international master's programs of the institute: Global Information Systems Management and International Master in Management of Information Technology. Information systems is a popular minor for students of many areas of Economics, Business Administration as well as Computer Science.

The focus of the research activities within the institute lies within understanding the utilisation of information and communication technology in enterprises and other organisations. The research conducted within the institute covers most of the key areas of Information Systems. The research activities can be classified into four themes:

- Management of Information Systems and Business Information Systems
- Networks and Business Models
- Work Informatics
- Healthcare Information Systems

In terms of research methods used, the institute has a track-record and long traditions of conducting action research dating back to the 1980s. Today, the competence of the faculty members covers the whole methodological spectrum from qualitative to quantitative research.

Despite being in a business school, the school also has a rich tradition in the pub-



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lic sector and third sector organisations. E-health is a good example of this, where the role of public service is essential. Research is done from the viewpoint of different organisational stakeholders: organisation's top management, Information Systems management, as well as individuals such as customers or workers. Recent developments put emphasis on the management and organisational aspects of data security and privacy, as well as IT governance issues.



KEDGE BUSINESS SCHOOL – DEPARTMENT OF OPERATIONS MANAGEMENT AND INFORMATION SYSTEMS

› KEDGE Business School – Department of Operations Management and Information Systems www.kedgebs.com



ABOUT THE INSTITUTION

KEDGE is a leading French business school with four campuses in France (Paris, Bordeaux, Marseilles and Toulon), three abroad (Shanghai, Suzhou and Dakar) and three partner campuses (Avignon, Bastia and Bayonne). The KEDGE community is consists of 12,600 students, 183 professors, 275 international academic partners and 60,150 alumni around the world.

KEDGE offers a large portfolio of 36 programmes in management, ranging from bachelor's and master's degrees to MBAs and Executive Education.

KEDGE Business School is AACSB, EQUIS and AMBA-accredited, and is a member of the Conférence des Grandes Ecoles. It has been ranked by the Financial Times since 2008. Kedge Business School is committed to excellence, social responsibility and diversity.

The "Operations Management and Information Systems" department is valued for its competency in purchasing, logistics, supply chain and Information Systems management. The team members are highly recognized for expertise in the area of Information and Decision Science, in Knowledge Management, Serious games, e-business, and Organisational Learning research fields.

INSTITUTION AT A GLANCE

- Founded in 1874
- One of the oldest "Grandes Ecoles" in France
- 36 programs
- 160 permanent professors
- EQUIS, AMBA and AACSB accredited

RESEARCH TOPICS

- IS in Operations Management
- Purchasing and IS
- e-distribution, e-commerce, e-business
- Supply Chain and OM Decision-Making & Decision Analysis
- Digital transformation in supply chain
- Organizational Learning/ Knowledge Management/Competences
- Communities of practices;
- Electronic Marketplaces
- Serious games

CURRENT RESEARCH PROJECTS

1) Digital Aerospace project

The starting point of the project is an intention of action: to cross two forces present in Montreal, aerospace and digital, in order to stimulate a dynamic allowing Quebec to have a technological leadership in these areas. It is also for CRIAQ (Consortium de recherche et d'innovation en aérospatiale au Québec) to initiate a movement to promote this rapprochement rather than let it happen through random individual initiatives by stakeholders. This intention of action, to be realized, needs to revolve around scientific, technological, economic, managerial and social knowledge and information. It also needs to become

clearer and take shape in order to be able to challenge the actors involved, to interest them and to obtain their adhesion. It is this phase of cognitive and social construction that has been the focus of this project. Thus, this project aims to identify the opportunities that advance in the digital field represent for the aerospace industry in Quebec as a whole, to deduce the R & D needs and translate them into major areas of development in an orientation "program" in the short, medium and long term. It also aims to analyse the obstacles that may hinder the digital transformation of the aerospace industry. The studies and analyses carried out within the framework of this project have the ambition to eventually serve as an input for future research projects, thus feeding CRIAQ's project base. This research program brought together more than thirty researchers from Polytechnique and HEC Montréal, who developed several methodological approaches: a thorough analysis of the literature, the construction of two databases, data segmentation and analysis, networks, 70 interviews, two Co-Designs.

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2) "Behavioural Visibility in Data – Experiencing New Research Methods with Reality Mining"

The project which is led by professors Irene NG (Warwick University, UK) and Tatiana Bouzdine – Chameeva focuses on the new opportunities of reality mining. The rapid evolution of the digital world from data mining to reality mining proposes new fas-

inating opportunities to observe human social behavioural activities and analyse them with the goal of identifying the predictable patterns of behaviour. We explore how to develop research projects and use these new scientific research tools and methods in social sciences based on these observations, particularly through the use of the HAT- lab data (<https://www.hat-lab.org/>). The actual data of donators (spending, location, activities, sleep) is used for crafting a robust and useful research methodology, put in place tests for reliability and validity, ensure robust and unbiased experimental design, analysis, interpretation, and reporting of result.

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3) "Optimising visiting flow in a cultural centre – LA CITÉ DU VIN "

Museum facilities today are expected to increase the number of visitors and also enhance the quality of experience by achieving comfortable visiting conditions through management of the flow of visitors. The project launched by KEDGE BS in collaboration with La Cité du Vin (<https://www.laciteduvin.com/en>) – a unique cultural centre situated in Bordeaux, dedicated to wine as a cultural, universal and living heritage of civilisations – studies visitors' movement and the layout of the museum area and aims to identify the root causes of eventual problems of congestions.

The data provided by the devices handed to the visitors is analysed in order to evaluate visitors' behaviour. The signals emitted from the devices are received as code of information which contains quantifiable information about the visitors' experience. After collecting data, we set up a simulation model under different scenarios and the conceptual and physical constraints. Arena simulation software helps to model the current situation in the museum and test new scenarios, introducing also several KPIs for a better understanding the flow. Our statistical analysis and simulation models result in proposing a more balanced and less congested system.

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EVENTS

ILS 2018 conference organized at KEDGE Business School, Talence, France was devoted to "Emerging Challenges in a Complex Future" including the hot topics of Digital Transformation in Transportation for example.

PUBLICATIONS

Allal-Chérif, O. & Arena, L. (2018). Etienne Wenger : Les communautés de pratique au service de la connaissance située et de l'apprentissage social, pp. 476-498. In Walsh, I., Kalika M. Dominguez-Péry, C. (Dirs.), Les grands auteurs en systèmes d'information, EMS (Grands auteurs), 645 p.

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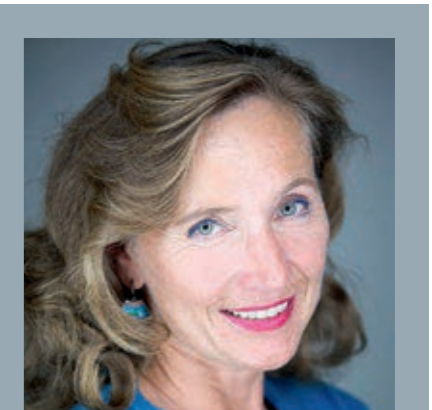
Bouzdine-Chameeva T. (2018). Behavioural Visibility in Data. Workshop in HAT company, London (UK).

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Dupouët, O. (2018). Communauté de pratique et communauté épistémique : Convergences et divergences. GECSO 2018, Paris (France).

Goglio-Primard, K., Soulier, E. (2018). Connaissances et technologie dans les communautés d'innovation. Revue Systèmes d'information et management.23 (1), 3-9.

Makhlouf, M., & Allal-Chérif, O. (2019). Strategic Values of Cloud Computing Transformation: A Multi-Case Study of 173 Adopters. Journal of Global Information Management (JGIM), 27(1), 128-143.



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Ponsignon, F., Kleinhans, S., Bressolles, G. (2018). Vers la qualité 4.0 : Apports croisés de la fonction qualité et de la transformation digitale. Paris : AFNOR éditions, 124 p.

DISSERTATIONS/HABILITATIONS

Jaegler, A. (2018). HDR : « From green to sustainable supply chains » supervised by Professor Nathalie Fabbe-Costes, University of Aix-en-Provence.

Jradi S. (2018) PhD thesis « Performance efficiency in wine sector », KEDGE Business School supervised by Prof Tatiana Bouzdine-Chameeva.

NATIONAL UNIVERSITY OF IRELAND GALWAY – LERO RESEARCH CENTRE AND BUSINESS INFORMATION SYSTEMS

› National University of Ireland Galway – Lero Research Centre and Business Information System <https://www.lero.ie/>



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ABOUT THE INSTITUTION

NUI Galway was founded in 1845 and has grown massively in size and reputation over the past 170 years. According to QS World University Rankings, the University is now among the top 1% in the world. NUI Galway offers a wide range of undergraduate and postgraduate courses, as well as flexible learning, professional qualifications and online learning options. NUI Galway has five colleges, 16 schools, and over 50 academic disciplines.

Lero NUI Galway resides within the J.E. Cairnes School of Business & Economics. Lero is the Irish software research centre. It brings together leading software research teams from universities and institutes of technology, in a coordinated centre of research excellence with a strong industry focus.

Lero NUI Galway aims to deliver world-class, high impact research through industry collaboration. We work at the cutting edge of software development and management, providing unique insights that impact the performance of organisations, while also setting the academic research agenda in the area.

The group have received over €4m in research funding and secured another €3.5m over the next 4 years. The research is funded by Enterprise Ireland, Science Foundation Ireland, the Irish Research Council, the European Commission and by multinational industry partners.

RESEARCH TOPICS

Our research concentrates on the following key areas: agility, temporality, open innovation, project portfolio management.

Agility: The growing popularity of agile/lean methods such as Scrum and Kanban indicate a strong desire to improve how we work and create value for customers. Despite many potential benefits of agile/lean adoption, there is no recipe to follow that will guarantee success. We examine agile methods within industry settings and further contribute to the concept and customisation of agile methods.

Temporality: Researchers are quick to refer to time in simple terms such as speed of organisational and social life. Our research explores time as an inherently complex, multi-faceted, subtle and complex phenomenon. This includes the evaluation of the true 'velocity', speed and value afforded by analytics and methods such as agile and flow.

Open Innovation: Open Innovation and the associated domains of crowdsourcing, crowdfunding and inner source software are changing the way organisations run projects. While there has been much focus in practice about the use of these methods, little reflection exists upon the theory and processes that underpin the concept. As organisations are faced with increased competition in the innovation space, new methods are needed to form the next generation of innovative products.

Project Portfolio Management: This gap in the literature becomes even more pertinent when we consider that contemporary implementations of agile go beyond small co-located teams with non-standard implementations now widespread – i.e., large and distributed teams or start-ups. This presents new challenges for the scaling of agile/lean and requires a rethink of project portfolio management.

CURRENT RESEARCH PROJECTS

A core activity is the researcher-industry knowledge exchange. These exchanges take place every three months and provide evidence-based insights on software implementation and management issues. This enables Lero NUI Galway to create tangible research outcomes that are immedi-

ately applicable to organisation settings. The team works with multinationals such as Dell, AIB, Accenture, and Markit Information Mosaic to deliver solutions to software agility issues.

Currently the team looks at areas such as: (I) social network analysis of multiplex information flow, with a particular emphasis on open and networked innovation and the role of information and communication technologies within these paradigms, (II) the use of open innovation strategies and practices across, public, private and philanthropic organisations, (III) the socio-technical aspects of information systems development (ISD) (Lean, Flow, Scrum) and the emphasises on viewing ISD as evolving activity systems (teams, organisations) beyond a single user, (IV) software engineering practices in software start-ups and the adoption of Lean start-up approach and practices in large and established organisations (V) information systems project portfolio management through the lens of complex adaptive systems theory, (VI) temporality within the context of ISD.

PUBLICATIONS

Sweetman, R. and Conboy, K. 2018. "Portfolios of Agile Projects: A Complex Adaptive Systems' Agent Perspective," Project Management Journal. DOI: 10.1177/8756972818802712

Denehy, D. and Conboy, K. 2018. "Identifying Challenges and a Research Agenda for Flow in Software Project Management," Project Management Journal. DOI: 10.1177/8756972818800559

Conboy, K., Denehy, D., and O'Connor, M. 2018. "'Big Time': An Examination of Temporal Complexity and Business Value in Analytics," Information and Management. DOI: 10.1016/j.im.2018.05.010

Edison, H., Carroll, N., Conboy, K., and Morgan, L. 2018. "An Investigation into Inner Source Software Development: Preliminary Findings from a Systematic Literature Review," in Proceedings of 14th International Symposium on Open Collaboration. DOI: 10.1145/3233391.3233529

Carroll, N., O'Connor, M., and Edison, H. 2018. "A Review on the Identification and Classification of Impediments in Software Flow," in Proceedings of 24th Americas Conference on Information Systems.

Schlagwein, D., Conboy, K., Feller, J., and Morgan, L. 2017. 'Openness' With and Without IT: A Framework and a Brief History. Journal of Information Technology, 32(4), pp. 297-305.



LUISS GUIDO CARLI UNIVERSITY – CENTRE FOR RESEARCH IN LEADERSHIP, INNOVATION, AND ORGANISATION (CLIO)

 LUISS BUSINESS SCHOOL

ABOUT THE INSTITUTION

Founded in 1966, LUISS is a private Italian University specialised in social sciences and strongly committed to conduct academic research and educate talented individuals. The affiliation with Confindustria offers unique research opportunities for LUISS researchers and business practitioners and provides LUISS students with solid career opportunities. Located in the hearth of Rome, the eternal city, LUISS holds partnering relationships for training as well as research purposes with universities around the globe. LUISS is composed of four Departments and four Schools covering the areas of Economics and Finance, Management, Law, and Political Science. The Business School and the Department of Business and Management are EQUIS accredited for all programmes delivered from the BA to the PhD.

LUISS faculty is actively engaged in both theoretical and applied research in a variety of areas of business and management including information system (IS). Since 1998, LUISS researchers have achieved international standing in IS education – including teaching and research – initially through the Research Centre on Information Systems (CeRSI) and since 2016 through the Centre for Research in Leadership, Innovation, and Organisation (CLIO). The LUISS IS group represents Italy in the ERCIS network and has contributed to the birth and to the growth of the itAIS (www.itais.org), the Italian Chapter of the AIS (www.aisnet.org). ItAIS plays an important role in the promotion and coordination of

the Italian IS academic and scientific community and has been awarded also in 2016 as an outstanding chapter of the AIS.

Teaching and research activities in the IS field at LUISS are conducted at intersections of Information Technology, Organization Studies and Innovation, supported by CLIO members who have published in international top journals including JIT, JSIS, I&M, CAIS, JKM, AMJ and Management Decision.

LUISS strongly encourage international collaboration and continued hosting visiting scholars from more than 150 partners Universities to support teaching and research. Among them, the following guests have ongoing collaborations with the LUISS IS group: Richard Baskerville from Georgia State University, John Baptista and Panos Constantinides from the Univ. of Warwick, Gerardo Patriotta, Bendik Bygstad and Ole Hanseth from the Univ. of Oslo, Øystein Sæbø from the Univ. of Agder, Colette Depeyre from Paris Dauphine, Lapo Mola from SKEMA and Robert Winter from the Univ. of St. Gallen. Still in 2017 members of the LUISS IS group have joined as visiting scholars the University of Agder (NO), Paris Dauphine (FR) and the University of Strasbourg (FR).

RESEARCH TOPICS

Research on IS at LUISS is done in conjunction with project activities in which members of the IS group participate in the iterative phases of designing and evaluating sociotechnical interventions. A multidisciplinary team of IS and organization schol-

ars with backgrounds in computer science, engineering, economics, management, cognitive and political sciences collaborate in both project and research activities by bringing together a multiplicity of methods for planning interventions and analysing phenomena from different perspectives. This approach allows addressing relevant problems and engaging in national and international cooperation with other universities and research institutions.

IS research at LUISS focuses on three main streams. The first is related to architecture and governance of digital products and platforms. The second is related to digital transformation in private and public sectors. The third refers to IT and Cybersecurity governance. Among the more recent application domains there are e-government, digital entertainment, e-Health and social services, crowdfunding, law enforcement and cyber-defence.

CURRENT RESEARCH PROJECTS

The Erasmus+ project MASTIS (Establishing Modern Master-level Studies in Information Systems) project started in February 2016. The project is an EU funded project aimed at investigating and discussing the curriculum in the Information Systems area and the way of teaching practiced in 17 universities out of 10 different European countries. The main objective of MASTIS is that of aligning and possibly updating programs and teaching methods in most Universities of Ukraine and Montenegro, but as a secondary outcome, it supports a fruitful exchange of experiences on methods,

tools, arguments among ERCIS members and universities of eastern European countries. The CLIO team is providing feedback and advice on how coding, design thinking and gamification are applied as teaching practices in the area of digital innovation.

In 2018, a new research project has been approved for funding by the Ministry of Economic Development. The Cyber 4.0 project aims at establishing a public-private partnership acting as a competence centre on cybersecurity for Italian SMEs.

Additional IS projects led by CLIO members are related to Dark Nets, social media engagement, digital workplace transformation, IT in citizen science, IT in the fruition of cultural goods. Recently the LUISS IS group opened a Chair on Business Transformation and Data Driven Innovation sponsored by Cisco and a postdoc position on Dark Net Markets.

PUBLICATIONS

Cappa, F., Laut, J., Porfiri, M., & Giustiniano, L. (2018). Bring them aboard: Rewarding participation in technology-mediated citizen science projects. *Computers in Human Behavior*, 89, 246-257.

Cirillo, Bruno, Stefano Breschi, and Andrea Prencipe (2018). “Divide to connect: Reorganization through R&D unit spinout as linking context of intra-corporate networks.” *Research Policy*.

Cunha, Miguel Pinae; Giustiniano, Luca; Neves, Pedro; Rego, Arménio (2018). Improving Agility: Leading and following at the boundary of structure and extemporaneity. In: *Learning and Innovation in Hybrid Organizations: Strategic and Organizational Insights*. ISBN: 978-3-319-62466-2.

Di Pietro, F., Spagnoletti, P., & Prencipe, A. (2018). Fundraising across digital divide: evidences from charity crowdfunding. In A. Lazazzara, R. C. D. Nacamulli, C. Rosignoli, & S. Za (Eds.), *Organizing in the digital economy*. At the interface between social media, human behaviour and inclu-

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Hayes, D. R., & Cappa, F. (2018). Open-source intelligence for risk assessment. *Business Horizons*.

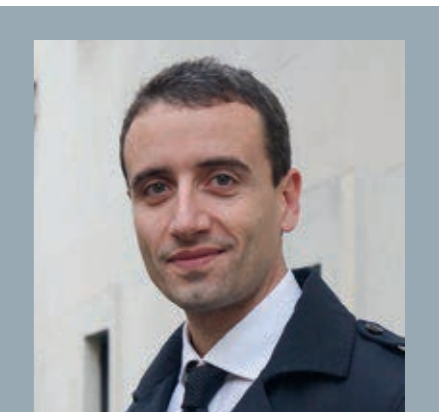
Hayes, D., Cappa, F., & Cardon, J. (2018). A Framework for More Effective Dark Web Marketplace Investigations. *Information*, 9(8), 186.

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Spagnoletti P., Za S., Winter R., Mettler T. (2018) Exploring Foundations for Using Simulations in IS Research, *Communications of the Association for Information Systems*, vol 42, art. 10

Spagnoletti, P., Me, G., Ceci, F., & Andrea Prencipe (2018). Securing national e-ID infrastructures: Tor networks as a source of threats. In F. Cabitza, C. Batini, & M. Magni (Eds.), *Organizing for the Digital World*. IT for individuals, communities and societies.: 1-14. LNISO - Springer.

Tea, R., Davies, A., & Whyte, J. (2018). Modular designs and integrating practices: Managing collaboration through coordination and cooperation. *Research Policy*, forthcoming.



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AWARDS

- Alessio Maria Braccini obtained the Italian National Scientific Habilitation as Full Professor in March 2018
- Paolo Spagnoletti has obtained the Italian National Scientific Habilitation as Full Professor in March 2018
- Stefano Za has obtained the Italian National Scientific Habilitation as Full Professor in October 2018

EVENTS

- 5th Innovation in Information Infrastructures (III) Workshop, Roma, November 7th-9th 2017
- CISCO Digital Advisory Board (DAB), Rome, May 9th, 2018
- 15th edition of the ItAIS conference, Pavia, October 12th-13th 2018

UNIVERSITY OF LIECHTENSTEIN – INSTITUTE OF INFORMATION SYSTEMS – HILTI CHAIR OF BUSINESS PROCESS MANAGEMENT



ABOUT THE INSTITUTION

The Institute of Information Systems at the University of Liechtenstein was founded in 1991. It is represented by the **Hilti Chair of Business Process Management** (Prof. Jan vom Brocke). The Institute hosts two further chairs, the **Hilti Chair for Data and Application Security** (Prof. Pavel Laskov) as well as the **Chair of Technology and Innovation** (Prof. Stefan Seidel).

Members of the institute have published in leading **IS journals**, including MISQ, JAIS, JMIS, JIT, EJIS, ISJ, Communications of the ACM and MIT Sloan Management Review. The institute offers a **master's** degree in Information Systems with majors in Business Process Management and Data Science, a **Ph.D.** program in Information and Process Management, and a **bachelor's** degree in Business Administration majoring in Information Management & IT.

The institute is also a co-founder of the **Hilti Fellowship Program**, which offers excellent Master's students the opportunity to be part of an international project team at Hilti while attending lectures and seminars in our Master's Programme in Information Systems. The institute represents the Association for Information Systems (AIS) in Liechtenstein through the **Liechtenstein Chapter of the AIS** (LCAIS).

RESEARCH TOPICS

Our research specializes in business process management, information systems and innovation, data and application security. The institute's research agenda is dedicated to identifying and using information and communication technology to meet contemporary organizational needs in nine main areas:

Digital innovation focuses on the transformative power of digital technologies and their social, economic, and environmental impacts

Process management takes an innovation-driven and value-oriented perspective on process management and identifies and evaluates the business potential of modern information and communication technology in process management.

Sustainably digital investigates how information and communication technology can reduce the human impact on the natural environment and increase social well-being.

Content management designs and evaluates methods and models that can help companies develop strategies to manage content.

Big data analytics explores methods, particularly text-mining algorithms and sentiment analyses, that can help make today's unprecedented amounts of available data useful for private and public organizations and for society at large.

Enterprise resource planning studies enterprise systems from a process and innovation perspective and explores the different roles that enterprise systems can play in organizations and the various lifecycle phases of contemporary business applications.

Culture assessment is primarily concerned with identifying the constituent elements of a cultural setting that supports process-management objectives.

Digital nudging investigates how small modifications to websites (i.e., nudges like setting defaults) affect decision-making in digital environments.

IT security focuses on methodological competencies in addressing threats to the security of data and applications and in assessing risks associated with these threats.

CURRENT RESEARCH PROJECTS

Game-based Skill Assessment and Development

Virtual Reality (VR) applications are increasingly used by companies, amongst others for personnel assessment and selection. A proof-of-concept study evaluated the field of application of VR in human resource management. Therefore, a game-based VR application was used to draw conclusions on personal strengths and weaknesses as well as cognitive abilities. More than 100 students took part in this study.

Enterprise Content Analytics

This research project deals with the interface between Enterprise Content Management and (Big) Data Analytics, two topics



Game-based Skill Assessment and Development

of high relevance in the region. The project is carried out in close cooperation with the regional companies Hilti AG and Ivoclar Vivadent AG. The results will be provided to other regional companies within knowledge and technology transfer events.

AWARDS

AIS Senior Scholars Best Paper Award

For "Using Text Analytics to Derive Customer Service Management Benefits from Unstructured Data," published in MISQe, by Prof. Oliver Müller (IT University Copenhagen), Prof. Iris Junglas (Florida State University), Dr. Stefan Debortoli and Prof. Jan vom Brocke (both University of Liechtenstein).

Best Theory Development Paper Award

For "Digital capabilities facilitating rapid growth," by Dr. Sanja Tumbas, Prof. Jan vom Brocke (both University of Liechtenstein) and Prof. Dr. Nicholas Berente (University of Georgia).

European Research Paper of the Year Award 2018

For "How Is Your User Feeling? Inferring Emotion Through Human-Computer Interaction Devices", published in MISQe, by Dr. Markus Weinmann (University of Liechtenstein) and international research

colleagues, received the award by CIONET, the biggest community of IT executives in Europe.

AIS Award for Outstanding Contribution to Information Systems Education

Prof. Jan vom Brocke won the award for the publication of the AIS Global Information Systems Education Report and the online platform "eduglopedia.org" at ICIS 2017. Both include and present over 3,100 courses of 940 programs of more than 530 institutions in 63 countries in the area of Information Systems.

PUBLICATIONS

Berente, N., Seidel, S., & Safadi, H. (forthcoming). Data-Driven Computationally-Intensive Theory Development. Information Systems Research. (ABDC: A*; ABS: 4*; FT 50; ; ISI: 4.791; VHB: A+).

Simons, A., Kaiser, L. F., & vom Brocke, J. (2019). Enterprise crowdfunding: Foundations, applications, and research findings. Business & Information Systems Engineering, 61(1), accepted for publication. (ABDC: A; ABS: 2; ISI: 3.248; VHB: B).

Müller, O., Fay, M., & vom Brocke, J. (2018). The effect of big data and analytics on firm performance: An econometric analysis considering industry characteristics. Journal of Management Information Systems, 35(2), 488-509. (ABDC: A*; ABS: 4; FT 50 listed ; ISI: 3.91; VHB: A).

Lehrer, C., Wieneke, A., vom Brocke, J., Jung, R., & Seidel, S. (2018). How Big Data Analytics Enables Service Innovation: Materiality, Affordance, and the Individualization of Service. Journal of Management Information Systems, 35(2), 424-460. (ABDC: A*; ABS: 4; FT 50 listed ; ISI: 3.91; VHB: A).

Tumbas, S., Berente, N., & vom Brocke, J. (2018). Digital Innovation and Institutional Entrepreneurship: Chief Digital Officers' Perspective of their Emerging Role. Journal of Information Technology (JIT), 33(3), 188-202. (ABDC: A*; ABS: 3; ISI: 8.245; VHB: A).



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Seidel, S., Chandra Kruse, L., Székely, N., Gau, M., & Stieger, D. (2018). Design principles for sensemaking support systems in environmental sustainability transformations. European Journal of Information Systems, 27(2), 221-247. (ABDC: A*; ABS: 3; ISI: 3.505; VHB: A).

Complete list of publications:

<https://www.uni.li/en/university/institutes/information-systems/research-1/all-publications>

DISSERTATIONS

Leona Chandra Kruse: "Designing and Making Use of Design Principles in Information Systems Research".

Maria Fay: "On the Relationship between Big Data Analytics and Business Value".

KAUNAS UNIVERSITY OF TECHNOLOGY – DEPARTMENT OF INFORMATION SYSTEMS / CENTRE OF INFORMATION SYSTEMS DESIGN TECHNOLOGIES

› Kaunas University of Technology – Department of Information Systems ktu.edu



ABOUT THE INSTITUTION

The Department of Information Systems at the Kaunas University of Technology (KTU) was founded in 1993 as a result of more than 20 years of research in the field of information systems (IS). Since then, we have grown to become one of the leading departments in the KTU Faculty of Informatics. In 2012, the Department's Laboratory of Information Systems and Databases Design was restructured into the Centre of Information Systems Design Technologies (headed by prof. R. Butleris). In 2014, the Center has been expanded as part of the move to the newly established Integrated Science, Studies and Business Centre (Valley) „Santaka“. As of autumn 2018, the Department and Centre combined employed 27 researchers and teachers. Being among the leading IS R&D hubs in Lithuania, the Department has built good relationships with the local IT companies and accumulated valuable research experience with Lithuanian and international partners.

Our academic work is about providing quality education on fundamental and advanced subjects in the field of information systems. The Department has developed first and second cycle study programmes titled “Information Systems” and “Information Systems Engineering” respectively. At the start of the 2018-2019 study year, 150 students were studying in the Bachelor study programme, and 33 – in the Mas-

ter's. There were also 10 PhD students at the Department.

RESEARCH TOPICS

The KTU Department of Information Systems/Centre of IS Design Technologies specialize in areas related to Information Systems and Software Engineering, namely:

- Model driven development, Model-to-Model Transformation
- Computer-aided Software Engineering (CASE) technologies
- Conceptual modeling and databases
- Modeling of business processes, business vocabularies, and business rules
- User needs analysis and requirements modeling
- Ontologies and solutions for the Semantic Web
- Machine Learning
- Big Data and business intelligence
- Knowledge-based Systems

- Model-driven testing of information systems
- Project management
- Information systems user interface and usability

CURRENT RESEARCH PROJECTS

Development of Public services of the Syntactic Semantic Information System of Lithuanian Language (2017-2020). The project is carried out along with the Vytautas Magnus University (Lithuania) and financed by the Ministry of Transport and Communications of Lithuania. In 2018, the focus was on the design and implementation of tools for the statistical analysis of texts as well as automatic transcription of audio records based on deep neural networks and related technologies.

Smart Application Technology for Cloud Computing – SCAF (2017-2018). This EU Structural Funds co-financed project is coordinated by JSC “Sekasoft” and supervised by the Ministry of Education and Science and the Ministry of Economy of Lithuania. The project was aimed at facilitating the development of self-adapting organizations' management applications for MS Office 365 and MS Azure platforms by injecting custom built machine learning and semantic analysis based solutions into the process.



Establishing Modern Master-level Studies in Information Systems – MASTIS (2016-2019). Sponsored by the Erasmus+ Program. This international project has been extended for one more year to fully implement the planned modernization and/or establishment of the second cycle IS studies in 7 Ukrainian and 2 Montenegrin universities. The efforts are coordinated by the University Lyon 2 (France) and Simon Kuznets Kharkiv National University of Economics (Ukraine, member of ERCIS) and involve 7 other EU universities, 6 of them – ERCIS members.

Development of the solution for the data exchange between the Real Property Register and Lithuanian State Forestry Cadaster Information System (2018); technical specification of the Genetic Forest Resources Information System renewal (2018). The projects were funded by the Lithuanian State Forest Service and were a result of ongoing cooperation with the Lithuanian state forestry institutions.

PUBLICATIONS

Chami, M., Aleksandravičienė, A., Morkevičius, A., Bruel, J.-M. (2018). Towards solving MBSE adoption challenges: the D3 MBSE adoption toolbox. In Proceedings of the 28th annual INCOSE international symposium, Washington DC, USA, vol. 28-1, 1463-1477.

Germanaitė, I., Butleris, R., Zaleckis, K. (2018). How to describe basic urban pattern in geographic information systems. In Proceedings of the 24th International Conference on Information and Software Technologies (ICIST 2018), Vilnius, Lithuania, 153-163.

Jurgelaitis, M., Čeponienė, L., Čeponis, J., Drungilas, V. (2018). Implementing gamification in a university-level UML modeling course: a case study. Computer Applications in Engineering Education, Wiley. (In press).

Skersys, T., Danėnas, P., Butleris, R. (2018). Extracting SBVR business vocabularies and business rules from UML use case diagrams. Journal of Systems and Software, Elsevier, vol. 141, 111-130.

Vaičiukynas, E., Gelžinis, A., Verikas, A., Bačauskienė, M. (2018). Parkinson's disease detection from speech using convolutional neural networks. Lecture notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering : Proceedings of the 3rd International Conference GOODTECHS 2017, Pisa, Italy, vol. 233, 206-215.

Žitkus, V., Butkienė, R. (2018). Coreference annotation scheme and corpus for Lithuanian language. In Proceedings of the 2nd International Workshop on Advances in



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Natural Language Processing (ANLP 2018) of the 5th International Conference on Social Networks Analysis, Management and Security (SNAMS-2018), Valencia, Spain. (In press).

DISSERTATIONS

Mickevičiūtė, Eglė: Business Process Representation Based on Business Vocabulary and Business Rules Semantics.

UNIVERSITY OF WAIKATO – DEPARTMENT OF MANAGEMENT SYSTEMS

› The University of Waikato – Department of Management Systems mngt.waikato.ac.nz/msys



ABOUT THE INSTITUTION

The Waikato Management School (WMS) is accredited by AACSB International, EQUIS – the European Quality Improvement System, and AMBA – the UK-based Association of MBAs. AACSB is the US-based Association to Advance Collegiate Schools of Business and is the world's oldest-established quality assurance body in management education. These accreditations are reviewed every few years by a team of academics from business schools around the world to ensure Waikato Management School staff continue to offer high quality and relevant teaching and that our top research rankings, programming and planning are maintained to international standard. WMS was reaccredited by AMBA in 2017, and EQUIS in 2018.

WMS underwent significant restructuring in 2017. The eight departments were merged to become two schools: The School of Accounting, Finance and Economics (SAFE) and the School of Management and Marketing (SoMM). The previous Department of Management Systems was subsumed within SoMM. Associate Professor Stuart Dillon was appointed Head of this school. The school has approximately 40 academic staff and covers a number of academic disciplines, including Digital Business (formally known as Electronic Business). There are five academic staff in the Digital Busi-

ness discipline: Stuart Dillon, Eric Deakins, William Wang, Gohar Khan and, Karyn Rastrick. Digital Business is presently taught as an undergraduate major and minor, and also as a specialised Master's degree.

RESEARCH TOPICS

Our research reflects the multidisciplinary nature of the academics within the digital business discipline. Recent relevant research projects focus on:

- Social Media Analytics
- Digital Health
- Cyber-Security
- Online Shopping
- Social Media for Government
- Digitisation

CURRENT RESEARCH PROJECTS

A number of research projects are currently underway, primarily around the business application of emerging technologies.

One such project is seeking to understand the perceived consumer value of retailers social media brand presence. Facilitated by the retailers' own social media platforms, consumer were surveyed to assess the impact of retailer social media activity on purchase intentions.

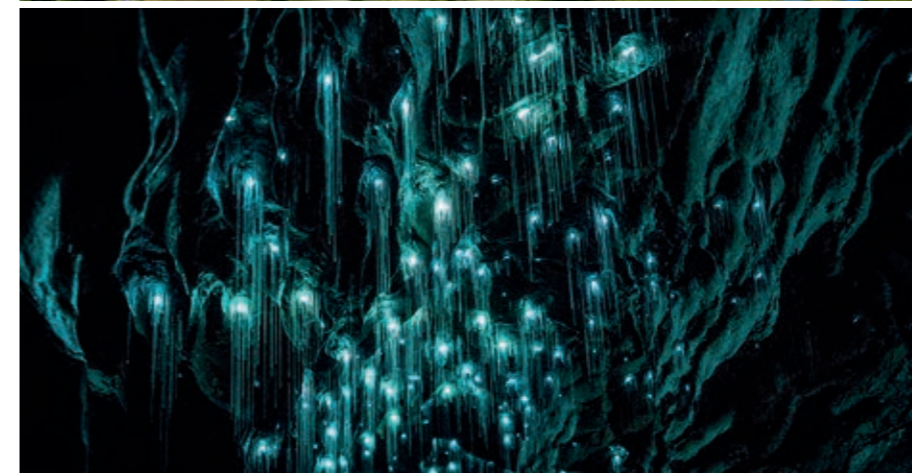
An externally funded research project has recently been completed that assessed the

willingness of tertiary institutions to adoption industry-delivered cyber security micro credentials into their curriculum.

A number of research projects involving the digitisation of health are also underway. These include the exploration of gamification to assist patients to better manage their diabetes, a study looking to streamline the patient referral process for melanoma skin cancer sufferers, and another seeking to understand how clinicians perceive new system adoption before and after rollout.

HOSTED SEMINARS

The school regularly hosts seminars by visiting speakers which span a range of topics, reflecting the multidisciplinary research interests of the school. In 2018, the digital business group was fortunate to receive funding to host two distinguished visitors. In July, Prof Jengchung Victor Chen, Distinguished Professor and Director, Institute of International Management, National Cheng Kung University in Taiwan visited and delivered a seminar. In September it was Dr Marc Smith, Director of the Social Media Research Foundation. Marc's visit was particularly popular and he delivered a number of well-attended seminars, including one to the business community.



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PUBLICATIONS

Vossen G; Schonhaler F; Dillon S (2017), The Web at Graduation and Beyond : Springer International Publishing, 292pgs.

Zhang T; Wang WYC; Pauleen D (2017), Big data investments in knowledge and non-knowledge intensive firms: what the market tells us, Journal of Knowledge Management, 21 (3) : 623-639.

Vossen G; Dillon S; Schomm F; Stahl F (2017), A classification framework for beacon applications, Open Journal of Internet Things (OJIOT), 3 (1) : 1-11.

Wang Y; Kung LA; Wang WYC; Cegielski CG (2017), An integrated big data analytics-enabled transformation model: Application to health care, Information and Management, online, doi:10.1016/j.im.2017.04.001

Arasanmi CN; Wang WYC; Singh H (2017), Examining the motivators of training transfer in an enterprise systems context, Enterprise Information Systems, 11 (8) : 1154-1172.

Khan GF (2017), Social media for government A practical guide to understanding, implementing, and managing social media tools in the public sphere : Springer, 159pgs.

Lu Y; Dillon S; Rastrick K; Vossen G (2017), Assessing the perceived value of cloud-based technologies in natural disasters, 4th International Conference on Information and Communication Technologies for Disaster Management, Munster, Germany, 11 Dec 2017 - 13 Dec 2017, 8pgs.

UNIVERSITY OF AGDER – DEPARTMENT OF INFORMATION SYSTEMS

› University of Agder – Department of Information Systems www.uia.no/is



ABOUT THE INSTITUTION

The Department of Information Systems (IS) is one of four departments within the Faculty of Social Sciences at the University of Agder (UiA). With an academic staff of 18 permanent positions and 2 adjunct professors, this is one of the largest IS departments in Norway.

The department offers a three-year bachelor programme in IT and Information Systems, a one year undergraduate study in IT and Information Systems, a two-year masters programme in Information Systems, and a three year PhD programme in Information Systems. The master programme started in 1999 as the first IS master programme in Norway. University of Agder also has a Department of ICT, responsible for education and research within computer science and ICT engineering.

The Department of Information Systems contributes actively to the IS community by publishing in leading IS journals, and hosting and participating in international conferences.

RESEARCH TOPICS

The research in the Department of IS is mainly organized in three interdisciplinary centres:

The Centre for Digital Transformation (CeDiT) conducts advanced social science research on how digitalization transforms societies and institutions. CeDiT applies an

institutional approach to address transformation processes following digital innovation and change, based on a multidisciplinary approach with active engagement of multiple stakeholders. The centre includes researchers from the faculty of Social Sciences, including academics within areas such as organizational studies, political science, sociology, developmental studies and information systems.

The Centre for eHealth focuses on teaching, research, development and testing of new technology for the health and social sector. Taking a user perspective, the aim of the centre is to make everyday life easier in today's health society by developing technological solutions such as smart house solutions and mobile home services.

The Centre for Integrated Emergency Management (CIEM) focuses on how the potential of evolving information and communication technologies can be fully deployed for significantly improving emergency preparedness and management. In collaboration with emergency stakeholders, the centre conducts research on community resilience, situational awareness, human-centered sensing, social media, decision support, cybersecurity and critical infrastructures.

CURRENT RESEARCH PROJECTS

InWork – need-based innovation for including people with disabilities in working life through the use of technology (2017-

2020). The project is funded by the The Research Council of Norway. The project consortium consists of the University of Agder, The Oslo School of Architecture and Design, two municipalities, two IT consulting companies, the Confederation of Norwegian Enterprises, and The Norwegian Association for Persons with Intellectual Disabilities. The project aims at developing innovative applications that can ease the transition from school to working life for people with intellectual disabilities.

Social Media for Integrated Emergency Management (SMIEM) (2017-2018). Funded by the Research Council of Norway and Deutscher Akademischer Austauschdienst (DAAD). In this project the University of Agder and University of Duisburg-Essen have investigated novel possibilities for social media analytics in the field of emergency management. The project has resulted in several joint publications, and also proven valuable as a testbed for the ideas that paved the way to a joint EU RISE project starting in 2019.

TELMA (Telemedicine in Agder) (2016-2019). Project funded by The Research Council of Norway. The project consortium consists of the University of Agder, three municipalities and the regional hospital trust. The project aims at developing and implementing telemedicine for Chronic obstructive pulmonary disease (COPD), diabetes and congestional heart failure, and research the benefit realization from this researches.



AWARDS

Tim Majchrzak, Narayan Ranjan Chakraborty and Mehdi Ben Lazreg from CIEM, University of Agder won the Best Paper Award in the e-Government track at HICSS 2018. The paper is titled “The Diffusion of Crisis-Related Communication on Social Media: An Empirical Analysis of Facebook Reactions”, and is co-authored with Björn Ross, Tobias Potthoff, and Stefan Stieglitz from University of Duisburg-Essen.

Niels Frederik Garmann-Johnsen and Tom Roar Eikebrokk from University of Agder received the Best Paper Award at the eTELEMED 2018 conference. The paper is titled “Worklife Ergonomics in eHealth Co-Creation Governance” and is co-authored with Migle Helmersen from Agderforskning.

PUBLICATIONS

Ajer, A. K.; Olsen, D. H. (2018). Enterprise Architecture Challenges: A Case Study of three Norwegian Public Sectors. Proceedings of ECIS 2018.

Busch, P. A. (2018). Technology and Institutional Logics. Proceedings of ICIS 2018.

Busch, P. A.; Henriksen H. Z.; Sæbø, Ø. (2018). Opportunities and challenges of digitized discretionary practices: a public service worker perspective. Forthcoming in Government Information Quarterly.

Bøe, T.; Gulbrandsen, B.; Eikebrokk, T. R. (2018). IS Continuance: The Role of Incentives and Goal Harmony. Forthcoming in International Journal of Information Technology and Management.

Lazreg, M. B.; Chakraborty, N. R.; Stieglitz, S.; Potthoff, T.; Ross, B.; Majchrzak, T. A. (2018). Social Media Analysis in Crisis Situations: Can Social Media be a Reliable Information Source for Emergency Management Services? Proceedings of ISD 2018.

Radianti, J.; Martinez, S. G.; Munkvold, B. E.; Konnestad, M. (2018). Co-Design of a Virtual Training Tool with Emergency Management Stakeholders for Extreme Weather Response. Proceedings of HCI International 2018.

Rose, J.; Flak, L. S.; Sæbø, Ø. (2018). Stakeholder theory for the E-government context: Framing a value-oriented normative core. Government Information Quarterly, 35(3), 362-374.

Sein, M. K.; Rossi, M. (2018) Elaborating ADR while drifting away from its essence: A commentary on Mullarkey and Hevner. European Journal of Information Systems.

Sein, M. K.; Thapa, D.; Hatakka, M.; Sæbø, Ø. (2018): A holistic perspective on the theoretical foundations for ICT4D research. Information Technology for Development.

Thapa, D.; Omland, H. O. (2018). Four steps to identify mechanisms of ICT4D: A critical realism-based methodology. The Electronic Journal of Information Systems in Developing Countries, e12054.

Tømte, C. (2018). MOOCs in teacher education: institutional and pedagogical change? European Journal of Teacher Education.

Vassilakopoulou, P.; Aanestad, M. (2018). Communal data work: data sharing and reuse in clinical genetics. Forthcoming in the Health Informatics Journal.



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DISSERTATIONS

Lazareva, A. (2018). Facilitating student engagement in the context of computer-supported collaborative learning.

Bøe, T. (2018). A managerial perspective on continued use of information technology: the complementary role of the Principal Agency Model.





ABOUT THE INSTITUTION

With almost 27,000 students, 11 faculties and about 1,700 academic staff members, the University of Gdansk is the largest institution of higher education in the Pomeranian, Poland. It offers the opportunity to study in 75 different fields of study with over 220 specializations.

The Department of Business Informatics (BI) of the University of Gdansk is involved in research and teaching in the field of Business Informatics on the Bachelor, Master, Post-Diploma and Doctoral levels. The Department is the main contributor to the E-learning Educational Platform of the University of Gdansk.

The Department of Business Informatics of the University of Gdansk is conducting intensive teaching and research activities. Some of its academic manuals are bestsellers in Poland. The Department is also active internationally, organizing conferences including the 10th European Conference on Information Systems (ECIS 2002), The 7th International Conference on Perspectives in Business Informatics Research (BIR 2008), The 8th International Conference on European Distance and E-learning Network (EDEN 2009) and the

series of the annual AIS events PLAIS/SIGSAND EuroSymposia on Information Systems. The Department is the partner of the European Research Center for Information Systems (ERCIS) consortium.

The Department is involved in the following international and research initiatives:



- Polish Chapter of Association for Information Systems – **PLAIS** (awarded two times by AIS as the Outstanding Chapter for 2014 and 2016 years)



- The Annual International Conference on Perspectives in Business Informatics Research – **BIR**



- **NTIE** (Naukowe Towarzystwo Informatyki Ekonomicznej) – Polish Society for Business Informatics Research



In 2015 the Student Chapter of Association for Information Systems was established at the Department of Business Informatics of the University of Gdańsk. There are almost 50 AIS Student Chapters worldwide, most of them from the United States, while only two – from Europe.

The Student Chapter of the Association for Information Systems of the University of Gdańsk gained the following achievements in the Annual AIS Student Chapter Competitions:

- Third place winner in the AIS Student Chapter Competitions 2015: „IS That Serves Society” - at University of Alabama;
- Best New Chapter Award 2015 - 2016 - at Indiana University;
- Third place winner in AIS Student Chapter Competitions 2016: „IBM Bright ICT Blue-mix Competition” at Indiana University;
- Third place winner in AIS Student Chapter Competitions 2017 „Bright ICT Innovation Contest” at Brigham Young University;

- Outstanding Fundraising Award for AIS Student Chapter of University of Gdansk at Brigham Young University;
- Third place winner in AIS Student Chapter Competitions 2018 at the University of Texas in the Software Innovation Challenge for the prototype “Intelligent baby monitor system” written in Python, using OpenCV library and Raspberry Pi 3 platform.

RESEARCH TOPICS

The areas of research interest at the Department of Business Informatics cover the following topics:

- **Unified theory of acceptance and use of technology**
- **IT Occupational Culture (ITOC)**
- **Business Informatics**
- **Information Systems Development: UML and SysML**
- **Big Data**
- **Agility, SCRUM**
- **Business Process Modeling**
- **Enterprise Modeling**

CURRENT RESEARCH PROJECTS

- Development and launching of the specialization of Bachelor and Master Studies at the Faculty of Management of the University of Gdansk – Business Informatics: Informatic Applications in Business (AiB);
- World IT project, coordinated by the University of North Carolina – in cooperation with teams from different universities worldwide. The survey on IT in Polish enterprises in respect of IT occupational culture (ITOC) has been conducted with a funding grant from the energy producer Energa. The selected results were presented at the 17th Annual Global Information Technology Management Association (GITMA) World Conference 2016 in San Diego, CA, USA.

EVENTS

The 11th PLAIS/SIGSAND EuroSymposium’2018. Information systems : Development, Research, Applications, Education. Gdansk, Poland, September 20, 201

PUBLICATIONS

Wrycza S., Maślankowski J. (ed.), Information systems : Development, Research, Applications, Education: 11th SIGSAND/PLAIS EuroSymposium 2018, Gdansk, Poland, September 20, 2018: Proceedings Springer, LNBIP 333, 2018.

Majewicz D., Maślankowski J., Big data analysis of the environmental protection awareness on the Internet: a case study, w: Interdisciplinary approaches for sustainable development goals : economic growth, social inclusion and environmental protection, Cham : Springer International Publishing, 2018.

Gawin B., Marcinkowski B., Business Intelligence Competency Center – establishing the assets behind delivering analytic business value, [in:] International conference on ICT management for global competitiveness and economic growth in emerging economies : ICTM 2017, Wrocław, Poland, October 23-24, 2017 : Innovations for Human Development in Transition Economies : proceedings / Jolanta Kowal, Anna Kuzio, Juho Mäkiö, Grażyna Paliwoda-Pękosz, Piotr Soja, Ralph Sonntag (Ed.), University of Wrocław, 2017.

Gawin B., Marcinkowski B., Business intelligence in facility management: determinants and benchmarking scenarios for improving energy efficiency, [in:] Information Systems Management. – 2017, Vol. 34, iss. 4, s. 347-358.

Woźniak M., An innovative customer-oriented approach to IT projects, based on TRIZ method, [in:] International conference on ICT management for global competitiveness and economic growth in emerging economies : ICTM 2017, Wrocław, Poland, October 23-24, 2017 : Innovations for Human Development in Transition Economies : proceedings / Jolanta Kowal, Anna Kuzio, Juho Mäkiö, Grażyna Paliwoda-Pękosz, Piotr Soja, Ralph Sonntag (Ed.), University of Wrocław, 2017.



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OUTLOOK

In 2019 we plan to have two PhD defenses.

In 2019 the Department of Business Informatics will organize the 12th Eurosymposium conference. More information will be available on eurosymposium.eu.





Wrocław University
of Science and Technology

ABOUT THE INSTITUTION

Wrocław University of Science and Technology (WUST) is the leading scientific and educational centre in Poland. Development of the University is confirmed by research potential, didactics at the highest level, innovation and cooperation with industry. WUST is an inheritor of the tangible property of the German University Königl. Technische Hochschule Breslau, and also the intellectual and scientific heritage of Lviv Polytechnic. The University, as Wrocław University of Technology, has been operating since 1945. Its creators and organizers were scientists from Lviv and Warsaw. From the very beginning it was an important centre of technical education. Today it is one of the biggest and best technical universities in the country with 28 815 students being educated by 2163 academic teachers in 16 faculties: Architecture; Civil Engineering; Chemistry; Electronics; Electrical Engineering; Geoengineering, Mining and Geology; Environmental Engineering; Computer Science and Management; Mechanical and Power Engineering; Mechanical Engineering; Fundamental Problems of Technology; Microsystem Electronics and Photonics; Pure and Applied Mathematics; Technology and Computer Science; Technology and Engineering; Technology and Natural Sciences. The rating of the university is confirmed by the results that the university achieves in annual national rankings one of the top four positions.

The Department of Information Systems (DIS), chaired by Professor Ngoc Thanh Nguyen, as part of the Faculty of Computer Science and Management currently consists of 18 computer science scientists and

twelve Ph.D. students. We regularly co-organize three international scientific conferences: Asian Conference on Intelligent Information and Database Systems (ACIIDS), International Conference on Computational Collective Intelligence (ICCCI), and International Conference on Multimedia and Network Information Systems (MISSI).

RESEARCH TOPICS

Our main objective is to carry out basic and applied research in the field of Information Systems (IS). The major issues, perspectives and challenges are as follows:

- Computational Collective Intelligence understood as an AI sub-field dealing with soft computing methods that enable making group decisions or processing knowledge among autonomous units acting in distributed environments. Web-based systems, social networks and multi-agent systems very often need such tools for working out consistent knowledge states, resolving conflicts and making decisions.
- Knowledge Management Systems referred to any kind of IS that store and retrieve knowledge, improve collaboration, locate knowledge sources, mine repositories for hidden knowledge, capture and use ubiquitous knowledge.
- Agents and Multi-Agent Systems related to modern software for constructing autonomous, complex and intelligent systems including the specification of agent communication languages and formalization of ontologies.

- Recommendation and Personalization in Web Systems applied in a great variety of domains, such as net-news filtering, web recommender, personalized newspaper, sharing news, movie recommender, e-commerce, travel recommender, e-mail filtering, music recommender, user interface recommendation, negotiation systems, etc.

- Ensemble and Hybrid Models that combine linear and non-linear features of existing models of Computational Intelligence.

- Semantic Information Retrieval range from link structure analysis to using social network relationship semantics.

- Multimedia Information Processing covering the following aspects: audio signal processing, image recognition and video clustering, loss and lossless compression.

- System Performance Analysis with content caching techniques, usability testing, content indexing algorithms, and Web-based optimization techniques.

- E-Learning Methodologies focused on applications of online collaboration paradigms.

CURRENT RESEARCH PROJECTS

Currently, the Department of Information Systems is involved in one transnational cooperation and three national projects.

Dr. hab. Dariusz Król has been appointed coordinator for the Polish-German research project “Deep Recommendation based on Collective Knowledge”. It was accepted for implementation as part of the cooperation program between the Ministry of Science and Higher Education and the German Academic Exchange Office (DAAD). The aim of the project is to activate the exchange of scientists between the Department of Information Systems and the Databases and Information Systems Group of the University of Münster in 2018-19.

Dr. Marcin Pietranik has been a laureate of SONATA, which is a funding opportunity addressed to holders of a doctorate degree. The project is entitled: “Methods of managing the evolution of ontologies and their alignments.”

Dr. Adrianna Kozierekiewicz and Dr. Marcin Maleszka have been laureates of MINIATURA. The MINIATURA is a funding opportunity addressed to holders of a doctorate degree, who have not acted as principal investigators to a research project, and have not been National Science Centre grantees. Dr. Kozierekiewicz’s project is entitled: “Development of a method for the evaluation of a potential objective growth of knowledge for ontology integration at the relational level”, while Dr. Maleszka’s project is entitled: “Influence of knowledge diffusion in groups on completeness of information retrieval.”

Dr. Marek Krótkiewicz has been appointed coordinator for cooperation between DSR SA and DIS entitled “Production Unit Performance Management Tool (PUPMT) – development of an innovative monitoring and diagnostic tool in the selection of factors having a significant impact on the efficiency index of dedicated production units based on the paradigms of control theory in order to optimize production processes in industry”. The National Centre for Research and Development supports the project.

AWARDS

- According to the recent Springer Reports of April 2018 the Proceedings of ACIIDS 2017, ACIIDS 2016, ACIIDS 2015, and ACIIDS 2014 belong to the top 25% most downloaded eBooks in the relevant SpringerLink eBook Collection.

- Prof. Ngoc Thanh Nguyen, head of DIS received Docendo Discimus Award for outstanding services to education at WUST.

- Dr Maciej Huk became a member of Editorial Board of the PLOS One Journal. PLOS One is prestigious peer-reviewed open-access scientific journal with rank

A and high impact factor.

PUBLICATIONS

Nguyen, L.T.T., Nguyen, NT., Vo, B. et al. Appl Intell (2018) 48: 1491. <https://doi.org/10.1007/s10489-017-1023-z>.

Van Du Nguyen, Ngoc Thanh Nguyen, An influence analysis of diversity and collective cardinality on collective performance, Information Sciences, Volumes 430–431, 2018. <https://doi.org/10.1016/j.ins.2017.11.053>.

Adamczyk M., Król D. (2019) Modelling of Taxi Dispatch Problem Using Heuristic Algorithms. In: Choroś K., Kopel M., Kukla E., Siemiński A. (eds) Multimedia and Network Information Systems. MISSI 2018. Advances in Intelligent Systems and Computing, vol 833. Springer, Cham.

Krzewińska J., Indyka-Piasecka A., Kopel M., Kukla E., Telec Z., Trawiński B. (2018) Usability Testing of a Responsive Web System for a School for Disabled Children. In: Nguyen N., Hoang D., Hong TP., Pham H., Trawiński B. (eds) Intelligent Information and Database Systems. ACIIDS 2018. Lecture Notes in Computer Science, vol 10751. Springer, Cham.

Homann L., Maleszka B., Martins D.M.L., Vossen G. (2018) A Generic Framework for Collaborative Filtering Based on Social Collective Recommendation. In: Nguyen N., Pimenidis E., Khan Z., Trawiński B. (eds) Computational Collective Intelligence. ICCCI 2018. Lecture Notes in Computer Science, vol 11055. Springer, Cham.

Krótkiewicz M., Wojtkiewicz K., Martins D. (2018) Influence Power Factor for User Interface Recommendation System. In: Nguyen N., Pimenidis E., Khan Z., Trawiński B. (eds) Computational Collective Intelligence. ICCCI 2018. Lecture Notes in Computer Science, vol 11055. Springer, Cham.

Maleszka M., Martins D.M.L., Vossen G. (2018): Supporting Online Data Purchase by Preference Recommendation. Proceedings of IEEE SMC 2018.

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University of Minho
School of Engineering

ABOUT THE INSTITUTION

The Department of Information Systems is located in the Campus de Azurém of University of Minho, in the city of Guimarães, the cradle city of Portugal. The department was established in the late 1990s, after a graduation program in Information Systems was created. The Department of Information Systems currently offers an integrated master (5 years degree program) in Engineering and Management of Information Systems, a master on Information Systems and a doctoral program on Information Systems and Technologies. All programs involve the collaboration between two schools of the University of Minho: School of Engineering and the School of Economics and Management.

The research done by the department's researchers (faculty and fellows) is integrated in a R&D unit – ALGORTIMI. ALGORTIMI encompasses research activities in a wide range of areas including information systems, computer science, computer networks and pervasive computing, industrial electronics, industrial engineering, optimization, among others.

The Department of Information Systems promotes academic work that focuses on topics at the intersection of information technologies, information, as well as human and social endeavours. Particular importance is given to design activities addressing phenomena that embrace that intersection aiming at solving enterprise problems or at seizing opportunities where information technology plays a central role. Research activities combine engineering and technology research methods, together with the ones used in the organizational studies, management, economics and social sciences. Within the departments' research projects it is therefore possible to find interpretive, positivist and design science perspectives and a wide range of research methods and techniques appropriate to the study of the particular Information Systems phenomena being addressed.

RESEARCH TOPICS

The research performed by the Department's faculty is consolidated in the IST (Information Systems and Technologies) research stream of ALGORTIMI. This stream include three main research groups:

Intelligent Data Systems group that deals with technologies, tools, models and techniques related to the Data Mining and Data Warehousing Systems. The main objective is the research in knowledge areas such as Adaptive Business Intelligence, Intelligent Decision Support Systems, Data Mining, Intelligent Data Analysis, Data Warehouse And OLAP.

Information Systems and Technology for the Transformation of Organizations and Society group. The researchers in this group adopt interdisciplinary approaches and research methods originated in the social sciences and engineering. These approaches are used to study the IS/IT adoption and use in organizations and society, and to develop new tools to solve identified problems or knowledge gaps.

Software Engineering and Management group is devoted to the development of state-of-the-art software-based information systems. This group focuses on both the engineering and management dimensions of the following research topics: (I) analysis and design of information systems; (II) business and location-enhanced database systems; (III) metadata and ontologies for the semantic Web; and (IV) process and project management life-cycles.

CURRENT RESEARCH PROJECTS

In 2017 numbers (2013-2017), the IST research was funded by projects totaling the amount of 3.6 M€ (42 K€ per integrated researcher and year). This includes international projects, such as the European FP7 project C4E: Cloud for Europe (<http://www.cloudforeurope.eu/>, 60.8 K€), H2020 project EQUAL-IST: Gender Equality Plans for Information Sciences and Technology Research Institutions (<https://equal-ist.eu/>, 150 K€) and INTERREG SUDOE Heritage-CARE (<http://heritagecare.eu/>, 225 K€). It also includes important national projects, such as SmartEGOV (3 M€), and collaborations with industry, Hovione Pharmaceutical (<http://www.hovione.com/>, 530 K€), ERASMUS+ projects (total ~50 K€), and various other smaller projects. Several of these projects started in 2016/2017 and will end in 2019/2020.

PUBLICATIONS

Alarabiat, A., Soares, D., Ferreira, L., & de Sá-Soares, F. (2018, May). Analyzing e-governance assessment initiatives: an exploratory study. In Proceedings of the 19th Annual International Conference on Digital Government Research: Governance in the Data Age (p. 30). ACM.

Amado, A., Cortez, P., Rita, P., & Moro, S. (2018). Research trends on Big Data in Marketing: A text mining and topic modeling based literature analysis. European Research on Management and Business Economics, 24(1), 1-7.

Barros, V.; Trigo, AM.; Andrade, C.; Leão, CP; Ramos, I. (2018). STEM, high school students, gender: are they compliant issues?, 9th international Conference on Intelligent Systems 2018, Madeira Island, Portugal 25-27 September.

Costa, C., & Santos, M. Y. (2018, June). Evaluating Several Design Patterns and Trends in Big Data Warehousing Systems. In International Conference on Advanced Information Systems Engineering (pp. 459-473). Springer, Cham.

Monteiro, C. S., Costa, C., Pina, A., Santos, M. Y., & Ferrão, P. (2018). An urban building database (UBD) supporting a smart city information system. Energy and Buildings, 158, 244-260.

Reascos, I., & Carvalho, J. A. (2018, January). A Conceptual Framework for the Implantation of Enterprise Applications in Small and Medium Enterprises (SMEs). In International Conference on Information Theoretic Security (pp. 50-61). Springer, Cham.

Varajão, J. (2018). A new process for success management – bringing order to a typically ad-hoc area. Journal of Modern Project Management, 5(3), 92-99.

Varajão, J., Moura, I. (2018). Leading Information Systems Academic Teams to High Performance, Twenty-fourth Americas Conference on Information Systems, New Orleans.

Vasconcelos, RM; Barros, V.; Araujo, E.; Amaral, L. and Ramos, I. (2018). A Positive Perspective to Implementation of a Gender Equality Plan: A question of design, time and participation, 2018 IEEE Frontiers in Education Conference, San Jose, CA, USA, October 3-6.

DISSERTATIONS/HABILITATIONS

Ayman Alarabiat, “Electronic Participation through Social Media Citizens’ Acceptance Factors at Local Government Level”, Supervisor: Delfina Sá-Soares.

Isaías Bianchi, “IT Governance Mechanisms Baseline for Universities: A Multi-Country Study”, Supervisor: Rui Dinis Sousa.

Fernando Belfo, “Influence of Incentive Policy in the Alignment of Business and Information Technology”, Supervisor: Rui Dinis Sousa.

Pedro Malta, “Effective Ways of Achieving and Sustaining Business-IT Alignment.”, Supervisor: Rui Dinis Sousa.



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Tiago Pereira, “Critical Knowledge Monitor System Model: Healthcare Context”, Supervisor: Henrique Santos.

Nuno Oliveira, “Mining Social Media Sentiment to Forecast Stock Market Behavior”, Supervisor: Paulo Cortez.

Carlos Salgado, “An OMG Model-based Approach for Aligning Information Systems Requirements and Architectures with Business”, Supervisor: Ricardo Machado.





NATIONAL RESEARCH
UNIVERSITY

ABOUT THE INSTITUTION

Consistently ranked as one of Russia's top universities, the Higher School of Economics is a leader in Russian education and one of the preeminent economics and social sciences universities in eastern Europe and Eurasia. Having rapidly grown into a well-renowned research university over two decades, HSE sets itself apart with its international presence and cooperation.

Our faculty, researchers, and students represent over 50 countries, and are dedicated to maintaining the highest academic standards. Our newly-adopted structural reforms support HSE's drive to internationalize, and the groundbreaking research of our faculty, researchers, and students.

Now a dynamic university with four campuses, HSE is a leader in combining Russian education traditions with the best international teaching and research practices. HSE offers outstanding educational programmes from secondary school to doctoral studies, with top departments

and research centres in a number of international fields.

Since 2013, HSE has been a member of the 5-100 Russian Academic Excellence Project, a highly selective government programme aimed at boosting the international competitiveness of Russian universities. (<https://www.hse.ru/en/>)

In 2018 HSE rises 50 places in the Social Sciences Ranking and maintains Position in Business and Economics. (<https://www.hse.ru/en/news/226173007.html>)

Founded in 2002, the HSE School of Business Informatics was created with the active participation of leading Russian and multinational companies and is a pioneer in the new educational discipline of Business Informatics, which combines information technology (IT), computer science and management concepts. The school aims to attract talented and motivated young people to form Russia's future entrepreneurial and administrative elite professionals in business informatics. (<https://bi.hse.ru/en/about/>)

RESEARCH TOPICS

- Business value of enterprise IS
- Industry 4.0
- PLM and production processes
- IoT and IoS
- Big Data Analytics
- Big Data BPM
- S-BPM
- IT outsourcing
- E-Business
- Smart Commerce
- Web 3.0
- Semantic technologies

CURRENT RESEARCH PROJECTS

Grants of the Russian Foundation for Basic Research, devoted to

- the study on the evolutionary dynamics of social networks based on conditional simulation-textured resource environment;
- traveling and quasi-traveling waves in complex dynamical systems;
- theoretical development and simulation of methods of trajectory control over groups of dynamical objects on the basis of hydrodynamics theory and a concept of inverse dynamics problems;

- research and development of mathematical models, methods and algorithms of visualization and graph analysis by the example of social networks;

AWARDS

- Students from the school of Business Informatics won the HEX2018 hackathon, Eindhoven, Netherlands;
- The Master programme "Big Data Systems" entered the Top 50 in the QS World University Rankings in the field of business analytics, taking the 35th place.

EVENTS

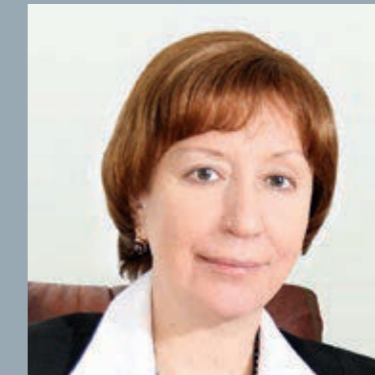
- International Workshop on the Internet of Things and Smart Services (ITSS2018), Vienna, Austria, July 2018;
- Lecturers from the School of Business Informatics participated in 23rd SAP Academic Conference EMEA, Munich, Germany, September 2018;
- Opening of SAP Next-Gen Chapter with a focus on Digital Marketing and e-Commerce;
- Russian-French Workshop on Big Data and Applications, Paris, France, October 2018;
- Annual Workshop on Big Data Application organized by the AIS Special Interest Group (SIG) on Big Data Analytics, San-Francisco, December 2018.

SELECTED PUBLICATIONS

Zykov S. V., Gromoff A. I., Kazantsev N. Software Engineering for Enterprise System Agility: Emerging Research and Opportunities. Hershey: IGI Global, 2018.

Desmond D.K. Attadjei, Yash Madhwal, Peter B. Panfilov. A Decision Phases of a Supply Chain Management: A Proposed Decision Support System to Boost Organizational Decision Making // International Journal of Engineering and Technology (UAE). 2018. Vol. 7. No. 2.28. P. 157-159.

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Dmitriev A.V., Dmitriev V.A., Tsukanova O. A., Maltseva S. V. A Nonlinear Dynamical Approach to the Interpretation of Microblogging Network Complexity, in: Studies in Computational Intelligence Vol. 689: Complex Networks & Their Applications VI. Springer, 2018.

Maule M., Moltchanov D., Kustarev P., Mikhail Komarov, Andreev S., Koucheryavy Y. Delivering Fairness and QoS Guarantees for LTE/Wi-Fi Coexistence Under LAA Operation // IEEE Access. 2018.

Zelenkov Y. The Impact of Knowledge Management and Change Readiness on the Effectiveness of Russian Private and State-Owned Organizations., in: Knowledge Management in Organizations 13th International Conference, KMO 2018 Vol. 877. Switzerland: Springer, 2018.

DISSERTATIONS/HABILITATIONS

O. Tsukanova. Models and Methods of Data Resource Management in Network Communities.



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NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS – NIZHNY NOVGOROD



NATIONAL RESEARCH
UNIVERSITY

ABOUT THE INSTITUTION

The Higher School of Economics in Nizhny Novgorod (HSE NN) was founded in 1996. The main educational activities of the Faculty of Informatics, Mathematics and Computer Science (IMCS) of the HSE NN are related to modern enterprise organization, enterprise architecture, business mathematical and computer modeling. Three laboratories TAPRADESS (Theory and Practice of Decision Support Systems), LATNA (Laboratory of Algorithms and Technologies for Networks Analysis) and TMD (Topological Methods in Dynamics) are the research units of the Faculty IMCS. In 2014 the Department of Fundamental Mathematics was opened.

RESEARCH TOPICS

The research of the Faculty IMCS focuses on the following directions:

- Cognitive Science – the development of methods and techniques of receiving, processing, storage, use and management of professional knowledge
- Situational Modeling – multidimensional modeling of the behavior and decision making processes of individual and collective agents in complex distributed systems.
- Original ways of formalizing the knowledge, which are based on ontological engineering, and are supplemented by

practical methods of integration and verification of complex corporate service oriented systems.

- New mathematical models and multiagent optimization algorithms in distributed service-oriented systems applicable to different domains (transport, planning, training activities); the result defines new approaches to the creation and use of intelligent decision support systems in the modern service-oriented economy.
- Axiomatic approach to non-compensatory aggregation (decision making rules) and axiomatic approach to general measure of power (power indices) in a voting body.

CURRENT RESEARCH PROJECTS

Knowledge technologies for improving multi-modal logistics operations in seaports

The project team performs an analysis of business-processes and information technologies in the framework of modern port logistics operations. The goal of the project is to develop high-level models of adaptive business processes and distributed software implementations using multi-agent technologies. The project is conducted in co-operation with INSA-Rouen (France).

Russian Foundation for Human Research grant “Application of robust statistical methods to network structures of stock market”

The grant RFFI 16-06-00184-A (2016-2018)

“Development and research of online-discussion models based on the political news discussing “.

This research project aims at developing new scientific knowledge about communication processes, which emerge during Internet discussions. Main results of the research will include analytical and simulation models of “online” internet political discussions. These models will map categorical matrices and conceptual models detected in the discussion texts to the multi-dimensional space of agents’ opinions.

The grant RFFI “Dynamic systems with chaotic trajectories behavior and their applications to natural science models”

AWARDS

Professor Panos Pardalos, Research Director of the Laboratory of Algorithms and Technologies for Analysis of Network Structures, awarded the Medal “Recognition - for the contribution to science and education”

EVENTS

- The Summer School on Operational Research and Applications, March 5 – 7, 2018. The main topics of the school are related to practical algorithms in logistics, transportation and traffic management, scheduling, decision science, and stochastic programming.
- Workshop “Organizations Engineering Days”, September 11-14, 2018
- Participating in Program Committees of the following conferences:



- BIR-2018, E. Babkin (PC Member)
- EOMAS-2018, E. Babkin (Co-chair), P. Malyzhenkov (PC Member)
- EEWC-2018 E. Babkin (PC Member)

SELECTED PUBLICATIONS

Irina E. Utkina, Mikhail V. Batsyn, Ekaterina K. Batsyna, A branch-and-bound algorithm for the cell formation problem, International Journal of Production Research. 2018. Vol. 56. No. 9. P. 3262-3273.

Sirotkin D., Malyshev D. A method of graph reduction and its applications Discrete Mathematics and Applications. 2018. Vol. 28. No. 4. P. 249-258.

Boris Ulitin, Eduard Babkin, An Object-Oriented Model for Smart Devices in Internet of Things. In bk.: Proceedings of the 22nd Conference of Open Innovations Association FRUCT. Jyväskylä: 2018. P. 263-271.

Kalyagin V. A., Pardalos P. M., Prokopyev O. et al. Computational Aspects and Applications in Large-Scale Networks. NET 2017, Nizhny Novgorod, Russia, June 2017 Iss. 247: Mathematics and Statistics Series. Cham: Springer, 2018.

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Pergl R., Babkin E., Lock R., Pavel Malyzhenkov, Merunka V. Enterprise and Organizational Modeling and Simulation, 14th International Workshop, EOMAS 2018, Held at CAiSE 2018, Tallinn, Estonia, June 11–12, 2018, Selected Papers Vol. 332. Springer, 2018.

DISSERTATIONS/HABILITATIONS

Alexander Ponomarenko, defense of the Ph.D. thesis “Research and development of search algorithms in distributed scalable data warehouses”.

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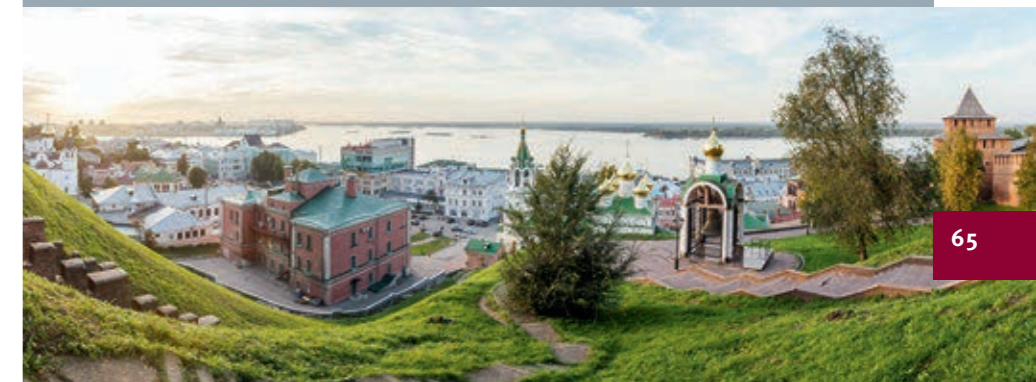
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ABOUT THE INSTITUTION

The Faculty of Organizational Sciences is a founding member of the University of Maribor. It has been involved in research and education about the organizational and informational sciences for more than 50 years. Today it provides Bologna programs of Information Systems, Human Resource and Educational Systems, as well as Business and Work Systems. During this period, the Faculty has taught a large number of graduates who have pursued employment in the manufacturing and service industries as well as governmental and educational institutions. The research area of the Faculty of Organizational Sciences covers complex dynamic management systems, covering aspects from human resources, information systems, business processes and general management. Research is organized in many laboratories and in the eCenter. All are involved in research projects, prototyping, consulting, education and training at national and international level. Their activities have been organized and are run following the Living-Lab approach, with a strong involvement of business and government organizations, users, IT providers and universities. The resulting eLivingLab is the Slovenian founding member of the European Network of Living Labs (ENoLL). The Faculty has a wide range of experiences from many EU, national and industry projects. The Faculty has established connections with numerous institutes, faculties and univer-

sities around the world and strives to enhance its internationally renowned reputation. Bilateral cooperation has occurred in several forms, including the exchange of higher education professors, participation in various research projects, and student exchange.

RESEARCH TOPICS

The research area of the Faculty of Organizational Sciences is focused on the investigation of complex dynamic management systems, covering various aspects from human resources, information systems, business processes and general management. The significant focus is on the implementation of newest ICT and their impact on new business model development, and increasing effectiveness and efficiency of business and government organizations, ICT industry, universities and society as a whole. Majority of our research and development activities are carried out within the following research topics:

- Business models and business model innovation
- Digital business
- Data science
- eHealth
- Social media and social CRM
- Cloud computing
- Internet of things
- Decision support systems
- Management of information systems
- Business processes management



- Simulation systems and models
- Organizational learning
- Quality and asset management
- Enterprise sustainability and sustainable development

CURRENT RESEARCH PROJECTS

EU projects:

- ENVISION – Empowering SME business model innovation, Horizon 2020
- MASTIS – Establishing Modern Master-level Studies in Information Systems, Erasmus+ KA2

National research programme:

- Decision support systems in the global e-business, Research programme, P5-0018
- Impact of management, organizational learning and knowledge management in modern organizations, Research programme, P5-0364-0586

Bilateral projects:

- Evolutionary and Bio-Inspired Algorithms Based Efficient Control of Cyber-physical Systems & Internet of Things, Bilateral project SI-RU
- Development of Wheelchair for Disabled Persons as a Speech Controlled Cyber Physical System, Bilateral project SI-MNE

EVENTS

Events in 2018:

- 31st Bled eConference: Digital Transformation – Meeting the Challenges, June 17–20, 2018 – <http://bledconference.org>
- 37th International Conference on Organizational Science Development – Organization and Uncertainty in the Digital Age,

March 21–23, 2018, Portorož, Slovenia
<http://fov.uni-mb.si/conference>

- Education in Information Society, October 12, 2018, Ljubljana, Slovenia
<http://vivid.fov.uni-mb.si/>

Next Conference:

- 32nd Bled eConference – Humanizing Technology for a Sustainable Society, June 16–19, 2019, Bled Slovenia
<http://bledconference.org>
- 38th International Conference on Organizational Science Development Ecosystem of organizations in the digital age, March 20-22, 2018, Portorož, Slovenia
<http://fov.uni-mb.si/konferenca/en/>
- Education in Information Society October, 2018, Slovenia
<http://vivid.fov.uni-mb.si/>

SELECTED PUBLICATIONS

BOHANEK, Marko, KLJAJIĆ BORŠTNAR, Mirjana, ROBNIK ŠIKONJA, Marko. Number of instances for reliable feature ranking in a given problem. Business systems research journal : international journal of the Society for Promotion of Business Information Technology (BIT), ISSN 1847-8344, 2018, vol. 9, no. 2, str. 35-44, graf. prikazi. <http://www.bsjournal.org/vol-9-no-2.html#>, doi: 10.2478/bsrj-2018-0017.

ŠKRABA, Andrej, STANOVOV, Vladimir V., SEMENKIN, Eugene S., KOLOŽVARI, Andrej, KOFJAČ, Davorin. Development of algorithm for combination of cloud services for speech control of cyber-physical systems. International Journal on Information Technologies and Security, ISSN 1313-8251, 2018, vol. 10, no. 1, str. 73-82, tabele, graf. prikazi.

NIKOLOSKI, Trajče, UDOVČ, Andrej, PAVLOVIČ, Martin, RAJKOVIČ, Uroš. Multi-criteria assessment model for farm reorientation. Journal of decision systems, ISSN 1246-0125, 2018, vol. 27, iss. , str. v tisku, doi: 10.1080/12460125.2018.1460165.

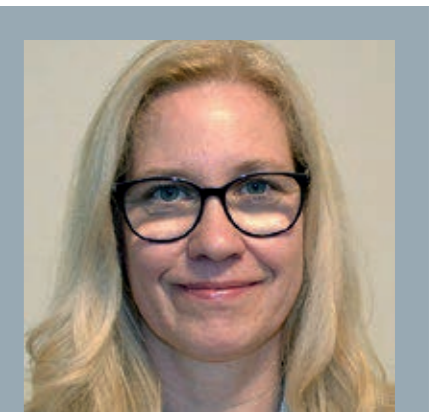
WANIVENHAUS, Helmut, KOVAČ, Jure, ŽNIDARŠIČ, Anja, VREČKO, Igor. Vienna construction projects : redirection of project management critical success factors - more focus on stakeholders and soft skills development. Lex localis : revija za lokalno samoupravo, ISSN 1581-5374. [Tiskana izd.], 2018, vol. 16, no. 2, str. 337-359, graf. prikazi, tabele, doi: 10.4335/16.2.337-359(2018).

KOFJAČ, Davorin, STOJANOVIČ, Radovan, KOLOŽVARI, Andrej, ŠKRABA, Andrej. Designing a low-cost real-time group heart rate monitoring system. Microprocessors and microsystems, ISSN 0141-9331. [Print ed.], nov. 2018, vol. 63, str. 75-84. <https://www.sciencedirect.com/science/article/pii/S0141933118301480?via%3Dihub>, doi: 10.1016/j.micpro.2018.08.010.

ŽNIDARŠIČ, Anja, FERLIGOJ, Anuška, DOREIAN, Patrick. Stability of centrality measures in valued networks regarding different actor non-response treatments and macro-network structures. Network science, ISSN 2050-1242, Mar. 2018, vol. 6, no. 1, str. 1-33, ilustr., doi: 10.1017/nws.2017.29. [

WERBER, Borut, BAGGIA, Alenka, ŽNIDARŠIČ, Anja. Factors affecting the intentions to use rfid subcutaneous microchip implants for healthcare purposes. Organizacija : revija za management, informatiko in kadre, ISSN 1318-5454. [Tiskana izd.], may 2018, vol. 51, no. 2, str. 121-134, tabele. <http://organizacija.fov.uni-mb.si/index.php/organizacija/article/view/842/1215>, <https://dk.um.si/lzpisGradiva.php?id=72607>, doi: 10.2478/orga-2018-0010.

JORDAN, Gašper, LESKOVAR, Robert, MARIČ, Miha. Impact of fear of identity theft and perceived risk on online purchase intention. Organizacija : revija za management, informatiko in kadre, ISSN 1318-5454. [Tiskana izd.], may 2018, vol. 51, no. 2, str. 146-155, tabele. <http://organizacija.fov.uni-mb.si/index.php/organizacija/article/view/844/1219>, <https://dk.um.si/lzpisGradiva.php?id=72609>,



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doi: 10.2478/orga-2018-0007.

DISSERTATIONS/HABILITATIONS

Finished Dissertations

Marjeta Marolt: Social CRM adoption and its influence on customer relationship performance – SMEs perspective. Supervisor: Andreja Pucihar, Associate professor. Co-supervisor: Hans-Dieter Zimmermann, Associate professor.

Anka Mohorič Kenda: The continuous improvement of model of health care quality indicators with feedback information from e-complaints system. Supervisor: Robert Leskovar, Professor.



POSTECH

ABOUT THE INSTITUTION

Industrial and Management Engineering is an academic discipline that involves the study of the design, development, and the management of integrated systems of people, material, equipment, and information in a variety of sectors. Therefore, Industrial and Management Engineering provides excellent opportunities to create new values and innovations in today's dynamic global environment.

We are pursuing an understanding of engineering technology and management by combining the contents of business administration with the existing industrial engineering field. While Industrial Engineering deals with the systematic planning, design, and optimization of complex industrial systems, Industrial and Management Engineering extends its coverage to more comprehensive fields, including the service industry, information industry, and management science.

The mission of the Department of Industrial and Management Engineering is to cultivate creative leaders in the era of convergence and innovation based on the core competencies of Pohang University of Science and Technology (POSTECH). To achieve this mission, we focus on providing specialized education and research programs based on the unique strengths of the Department; conducting research that significantly contributes to the academia and to the industry; and fostering the development of young talents with systems thinking capability, passion, and humanity.

RESEARCH TOPICS

There are three research groups at the department. The Business Analytics research group studies quantitative analysis techniques based on statistical techniques and optimization techniques to support corporate decision making and strategy formulation. BA research group extracts information from data and uses it to derive knowledge and finally wisdom. BA research group's main research topics are (1) data mining and graphical modeling techniques, (2) process mining and social network analysis techniques, and (3) large-scale sustainable system analysis.

The Smart Service System Research Group studies technologies that optimize the architecture, processes, and operations of the service system to meet the needs and context of stakeholders. Examples of smart service systems include smart home and smart health care, Smart transportation system, and smart factory. Smart Service System research group's main research topics are (1) Human-centered system UI /UX design, (2) Smart healthcare service system, and (3) Smart transportation/energy/information network system.

The SRM Research Group conducts research on systemic risk management that takes into account the interdependencies of risk factors, from a more diverse perspective on risks at the national, social, and enterprise levels that may arise in modern society. SRM Research Group's major research topics include (1) management of future forecast responses and disaster responses to various crisis situations at the national level, (2) enterprise-wide risk management measures, and (3) desirable financial systems for the aging society.



CURRENT RESEARCH PROJECTS

Blockchain platform with business models towards cross-domain interoperability (Ministry of Science and ICT, Jun. 2018 – Dec. 2021): The objective of the project is developing a blockchain platform that supports cross-domain interoperability. The platform will be applied in three industries such as health care, insurance, and automotive.

A methodology for clinical pathway development based on data mining/process mining and CP management system development (National Research Foundation of Korea, Jun. 2016 – May 2019)

Mining of technology functions for customer-driven product development (National Research Foundation of Korea, Jun. 2016 – May 2019)

Propelling business process management by research and innovation staff exchange (National Research Foundation of Korea, Dec. 2014 – Nov. 2018)

Development of best flow recommendation algorithms using artificial intelligence in semiconductor manufacturing (Samsung Electronics, Feb. 2018 – Dec. 2018)

AWARDS

Bonggyu Jang, Ph.D., won the Hyunwoo research award at the Korean Operations Research and Management Science Society (KORMS), 2018.

Kwangsoo Kin, Ph.D., won the Junghun research award at the Korean Institute of Industrial Engineers, 2018.

SELECTED PUBLICATIONS

Lee, J., Sun, J., Wang, F., Wang, S., Jun, C.H., Jiang, X., "Privacy-Preserving Patient Similarity Learning in a Federated Environment: Development and Analysis", *Journal of Medical Internet Research*, Vol. 6, 2018.

Min, D., Ryu, J.H., Choi, D.G., "A long-term capacity expansion planning model for an electric power system integrating large-size renewable energy technologies", *Computers and Operations Research*, Vol. 96, pp. 244-255, 2018.

Park, S., Kim, H., Kim, B., Cho, D.G., "Comprehensive analysis of GHG emission mitigation potentials from technology policy options in South Korea's transportation sector using a bottom-up energy system model", *Transportation Research Part D*, Vol. 62, pp. 268-282, 2018.



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Ki, Y., Kim, B.-I., Ko, Y. M., Jeong, H., and Koo, J., "Charging Scheduling Problem of an M-to-N Electric Vehicle Charger," *Applied Mathematical Modelling*, Vol. 64, pp. 603-614, 2018.

Lee, J., Kwon, R., Kim, H., Kang, S., Kim, K., and Jun. C., "A Data-Driven Procedure of Providing a Health Promotion Program for Hypertension Prevention," *Service Science*, Vol. 10, No. 3, pp. 289-301, 2018.

Baek, H., Cho, M., Kim, S., Hwang, H., Song, M., Yoo, S., "Analysis of length of hospital stay using electronic health records: A statistical and data mining approach" *PLOS ONE* 13(4): e0195901. <https://doi.org/10.1371/journal.pone.0195901>, 2018.





ABOUT THE INSTITUTION

The main campus of Luleå University of Technology (LTU) is located in Luleå, Sweden, on the northern coast of the Gulf of Bothnia. The university has campuses in Kiruna, Skellefteå, Piteå, and Filipstad. In 2016, the university had 1 800 employees and 15 000 students. Research is carried out in close cooperation with partners from industry such as Bosch, Ericsson, Scania, LKAB and SKF, with partners from the public sector, and with other leading international universities. Externally funded research has a turnover of more than EUR 90 million per year.

Information Systems (IS) research at LTU is defined by its inter-disciplinary research approach, which covers topics connected to the design and use of information technology in relation to people, organizations and societies. IS involves, currently, a faculty of 16 persons and 7 active doctoral students. IS-related research is also conducted within other research subjects such as Data Science, Industrial Marketing and Mobile, Pervasive Computing, Industrial Internet, e-Communication, e-Commerce, e-Government, and e-Health. Externally financed projects are also organized and supported by four research centers: Centre for Critical Infrastructure and Societal Security, Centre for Distance-Spanning Technology, the e-Health Innovation Centre and Centre for Inter-Organizational Innovation Research.

RESEARCH TOPICS

1. Open and user centered IT service innovations enable the development of smart cities and smart regions. Within this area, we are especially interested in understanding people's needs, value and motivators related to service innovations such as Internet of things, energy monitoring services and privacy enhancement/awareness services. We also carry out research within the Living Lab area in where the focus is to understand and research Living Lab as a phenomenon and its contribution to innovation processes.

2. Product Innovation regards services as a driver for individual, organizational, and societal change. To achieve viable change, there needs to be continuous interaction between design and evaluation processes. The challenges include enabling sustainable life through transformative services, creating and maintaining a service innovation culture, enhancing the service experience through co-creation, and assessing the value of services.

3. The Scandinavian tradition has a strong focus on user oriented design of information systems. The systems science is based on soft systems thinking and contributes with an approach to make different user needs explicit. These two parts together, integrate user needs with technical aspects in early phases of product development. Our research is focusing on sharing of experience based knowledge

in multifunctional design team. The perspective is to identify and analyze needs that our research work is focusing on, to be used to improve existing products. This is particularly useful for innovations. The approach in research is mainly aiming for increased understanding; the emphasis is on generating insights into people's experiences, interpretations and comprehensions. These aspects have an effect on the work in the design team, and might also be a key to how user needs are communicated into the design work.

4. Information Security focuses on technical, managerial, and behavioral aspects of information, network, and critical infrastructure security, as well as pedagogical issues of on-line security education. The topic covers security as a part of organizational practice, security, and IT-management practices, business risk practices, privacy, and technical design of enterprise security controls. An international, on-line master's program of information security and an on-line information security laboratory for both educational and research purposes are continuously developed. On-line information security laboratory offers technical facilities to support research topics related to information security such as hardware, network, and virtualization security. In addition, emerging research areas like Biometrics and GPU technology are within the scope of information security research.

5. Big Data Analytics is one of key research areas within the information systems group. We have three PhD students writing their thesis utilizing analytics and big data for various purposes such as: for smart cities, for enterprise systems, and for digital service innovation. Also, we have conducted research related to: fact-based decision making, big data epistemological challenges, and big data analytics framework.

6. Sustainable Data and Information Management regards data, information, and knowledge as a valuable resource that needs to be managed, cultivated, and utilized systematically throughout its lifecycle both in enterprises and in the public sector. The challenges include effective knowledge creation and acquisition, processing and storage of big data, data and information quality, open data and information distribution, data mining and analytics for decision-making, enterprise content management, digital curation and long-term digital preservation of information beyond governance of individual services and applications.

RECENT PROJECTS

LTU is an active member in the MASTIS Erasmus+ -project (<https://mastis.pro>) that aims at establishing modern master studies in information systems. The project was initiated through the ERCIS-network.

U4IoT (2017-2020) is a H2020 coordination and support action project, funded by EU commission, supporting LSPs with user engagement expertise and Living Lab processes. OrganiCity (<http://organicity.eu>) is an EU project with € 7.2m in funding that puts people at the center of the development of future cities. The project brings together 3 leading smart cities and a total of 15 consortium members with great diversity in skills and experience. I3 – Innovations and Industrial Internet – (<http://www.interregnord.com/>) aims at supporting product and service development in the northern regions of Norway, Sweden and Finland and promote cross-border collaboration.

Nimble (2016-2019) is a H2020 Research and Innovation action). The main objective is to develop the infrastructure for a cloud-based, Industry 4.0, Internet-of-things-enabled B2B platform on which European manufacturing firms can register, publish machine-readable catalogs for products and services, search for suitable supply chain partners, negotiate contracts and supply logistics, and develop private and secure B2B and M2M information exchange channels to optimize business work flows. Also, a focus in identifying collaboration patterns and sustainable business models for the NIMBLE business services.

DISSERTATIONS

Ali Padyab, "Exploring Impacts of Secondary Information Use on Individual Privacy", September 2018.

RECENT PUBLICATIONS

Juell-Skielse, G., Lönn, C.-M., Päiväranta, T. (2017). Modes of collaboration and expected benefits of inter-organizational e-government initiatives. A multi-case study. *Government Information Quarterly* 34, 4, 578-590.

Ali, B., Awad, A.I. (2018). Cyber and physical security vulnerability assessment for IoT-based smart homes. *Sensors* 18, 3, article 817.

Awad, A. I. (ed., 2018). Information security. Foundations, technologies and applications. Springer.

Habibipour, A., Georges, A., Ståhlbröst, A., Schuurman, D., Bergvall-Kåreborn, B. (2018). A taxonomy of factors influencing drop-out behavior in living lab field tests. *Technology Innovation Management Review*, 5-21.

Hassan, A. M., Awad, A. I. (2018). Urban transition in the era of the Internet of things. Social implications and privacy challenges. *IEEE Access* 6, 36428-36440.



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www.ltu.se/research/areas-of-excellence/enabling-ICT?l=en

Howcroft, D., Bergvall-Kåreborn, B. (2018). A typology of crowdwork platforms. To appear in *Work, Employment and Society*.

Shahat, A. M. (2018). A novel big data analytics framework for smart cities. To appear in *Future Generation Computer Systems*.





ABOUT THE INSTITUTION

For nearly 30 years, the Institute of Information Management at the University of St. Gallen (IWI-HSG) is dedicated to applied and design oriented research at the interface between business and IT. Founded in 1989, the institute pursues a mixed funding approach from both public and private sources. Privately funded research at IWI-HSG is usually organized in the form of research consortia (“competence centers”). These centers, each of which includes between four and eighteen corporate partners, fall under the responsibilities of different chaired professors. In addition to its research activities, IWI-HSG lecturers engage in executive education, offering degree and non-degree programs in areas such as Business Engineering or IT Business Management. Being one of the largest research units at a top business school, the IWI-HSG’s contributions focus on business innovation, including methods, reference models, and innovative prototypes.

As of fall 2018, Prof. Andrea Back, Prof. Walter Brenner, Prof. Reinhard Jung, Prof. Jan Marco Leimeister, and Prof. Robert Winter are heading five research groups comprising fourteen assistant professors or postdocs, twenty-five research assistants, thirteen research affiliates, seven student assistants and thirteen support staff members.

SELECTED RESEARCH TOPICS

The Chair of Prof. Back focuses on the impact of internet-based and mobile applications on businesses, covering topics such

as digital transformation, mobile business solutions, future of work, sports digitalization as well as e-learning. Further research is conducted on digital innovation management.

The Chair of Prof. Brenner focuses on information management, industrial services and enterprise systems, and digital consumer business (e.g., consumer and big data analytics). Another focal field of interest is design thinking.

The Chair of Prof. Jung investigates IT-enabled service and business innovation with focus on big data analytics. It also covers the use of data-driven services by individuals and studies their willingness to disclose data.

The Chair of Prof. Leimeister works on designing, implementing and managing IT-enabled means of organization and innovation. Research activities focus particularly on crowdsourcing, service engineering and management, digital business, and learning.

The Chair of Prof. Winter focuses on analysis and method design for enterprise-wide integration, coordination and transformation problems. Major projects in this field deploy simulation, experiments, and action design research.

SELECTED RESEARCH PROJECTS

A list of competence centers and current projects can be found at: <http://www.iwi.unisg.ch/?id=1202>

Business 2.0: The CC Business 2.0 focuses on the development of applicable methods for implementing and managing web 2.0 technologies, considering knowledge-intensive processes in the area of marketing, corporate communication, sales and services. Further information: <http://www.aback.iwi.unisg.ch/kompetenz/cc-business-20/>

Crowdsourcing: The research goals of CC Crowdsourcing include the development of models and instruments for systematic design, introduction as well as usage of crowdsourcing approaches for digital work and IT-based innovations. Further information: <http://crowdsourcing.iwi.unisg.ch>

Design Thinking: The Design Thinking Group is focused on embedding human-centric innovation tools into corporate structures. The research team strives to improve the capability of corporate IT and to reduce costs and risks in innovation projects. Further information: <http://dthsg.com/>

Digital Service Innovation: Research conducted in the context of the CC Digital Service Innovation revolves around service and business innovation that is driven by big data and data analytics. It also seeks to understand the acceptance and usage of digital services by individuals and enhance their user experience through digital nudging. Further information: <https://dsi.iwi.unisg.ch/>

Dynamics of Institutional Mechanisms in Enterprise-wide Information Systems Architecture: This research project aims at a distinctive theorization of enterprise-wide IS architecture management that goes beyond the existing, merely centralized conceptualizations. Further information: <http://p3.snf.ch/project-165607>

Industrial Service and Enterprise Systems: The CC Industrial Service and Enterprise Systems is engaged in studying the interplay between industrial services and corporate information systems. Goal of the CC is the development of scalable and flexible processes, systems, and data management approaches in the industrial context. Further information: <https://www.alexandria.unisg.ch/id/project/243205>

Project Leadership: The CC Key focuses on improving the leadership of large IT projects. Amongst others, its objectives include the development of methods and assessment tools that provide fast and intersubjective evaluations of common problem areas. Further information: <https://key.iwi.unisg.ch>

PUBLICATIONS

The following list is a limited extract of the IWI-HSG publication list in 2018. A complete list of publications with full texts of many papers are available at: <http://www.iwi.unisg.ch/publikationen>

Beese, Jannis; Haki, Kazem; Aier, Stephan & Winter, Robert (2018). Simulation-Based Research in Information Systems: Epistemic Implications and a Review of the Status Quo. *Business & Information Systems Engineering*, (online), 1-19.

Blohm, Ivo; Zogaj, Shkodran; Bretschneider, Ulrich & Leimeister, Jan Marco (2018). How to Manage Crowdsourcing Platforms Effectively? *California Management Review*, 60 (2), 122-149.

Haki, Kazem; Blaschke, Michael; Aier, Stephan & Winter, Robert (2018). A Value Co-cre-

ation Perspective on Information Systems Analysis and Design. *Business & Information Systems Engineering*, (online), 1-16.

Holler, Manuel; Herterich, Matthias; Dremel, Christian; Uebnickel, Falk & Brenner, Walter (2018). Towards a Method Compendium for the Development of Digitized Products – Findings from a Case Study. *International Journal of Product Lifecycle Management*, 11 (2), 131-153.

Lehrer, Christiane; Wieneke, Alexander; vom Brocke, Jan; Jung, Reinhard & Seidel, Stefan (2018). How Big Data Analytics Enables Service Innovation: Materiality, Affordance, and the Individualization of Service. *Journal of Management Information Systems*, 35 (2), 424-460.

Mettler, Tobias & Wulf, Jochen (2018). Physiolitics at the Workplace: Affordances and Constraints of Wearables Use from an Employee’s Perspective. *Information Systems Journal*, (online), 1-29.

Rietsche, Roman; Duss, Kevin; Persch, Jan Martin & Söllner, Matthias (2018). Design and Evaluation of an IT-based Formative Feedback Tool to Foster Student Performance. *International Conference on Information Systems (ICIS)*, San Francisco, CA, USA.

Silic, Mario & Ruf, Christian (2018). The Effects of the Elaboration Likelihood Model on Initial Trust formation in Financial Advisory Services. *International Journal of Bank Marketing*, 36 (3), 572-590.

Stöckli, Emanuel; Dremel, Christian & Uebnickel, Falk (2018). Exploring Characteristics and Transformational Capabilities of InsurTech Innovations to Understand Insurance Value Creation in a Digital World. *Electronic Markets*, 28 (3), 287-305.

Troll, Julia; Blohm, Ivo & Leimeister, Jan Marco (2018). Why Incorporating a Platform-Intermediary Can Increase Crowdsources’ Engagement. *Business & Information Systems Engineering*, (online), 1-18.



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AWARDS

Dr. Spottke won the “HMD Best Paper Award” for his publication: “What Companies Can Learn from the Videogame Industry for the Design of the Digital Customer Experience: An Analysis of the Platform Steam,” *HMD Praxis der Wirtschaftsinformatik*, 54 (5), 727-740.

EVENTS

In October 2018, the 48th edition of the St. Galler Anwenderforum took place, this time focusing on how autonomy and architecture can foster data-driven innovation. Other one- or two-day practitioner events, organized by IWI-HSG, are the Business Engineering Forum and the Swiss Industry 4.0 Conference.



UNIVERSITY OF TWENTE – CENTRE FOR TELEMATICS AND INFORMATION TECHNOLOGY

› University of Twente – Centre for Telematics and Information Technology www.utwente.nl/mb/iebis



ABOUT THE INSTITUTION

The University of Twente is where talent can best realize its full potential. Students and staff are the key. Together, over 3,000 scientists and professionals carry out ground-breaking research, bring about socially relevant innovation, and provide inspiring teaching for more than 10,000 students. To us, entrepreneurship comes as second nature. The campus is home to around 100 businesses, including student-run businesses. The University of Twente has also generated more than 700 successful spin-off companies including well known E-businesses such as Booking.com and Takeaway.com. The university's business park, Kennispark Twente, encourages and assists entrepreneurs to start new companies. But there is so much more than that happening on our wonderful, green campus. Our sports and cultural facilities are unique and we host events such as the world's largest student think tank, Create Tomorrow. Another legend of the Twente campus is the Netherlands' largest student sports event, the Batavieren Race. The campus is a hive of activity - a truly inspirational place to be! - University of Twente, the entrepreneurial university. The UT has ICT and Information Systems Research among its focus areas.

The Digital Society Institute is one of the three multidisciplinary research institutes of the University of Twente. At the Digital Society Institute, we strive to engineer digitalization toward systems that allow for well-informed, even accountable decision-making. We achieve this by doing scientific research that contributes to solving three challenges.

RESEARCH TOPICS

An essential aspect of our mission is to conduct research that has an impact on society. Digitalization stretches out from creating, innovating and developing digital technologies to adopting and crafting them to our everyday needs, desires and habits. In this way, digitalization shapes technologies by adding value and imposing what we can and are willing to adopt and use for our desires and the challenges we face.

- Well informed decision making

Considering that digitalization is ultimately used to drive many of the decisions we make as members of the digital society, we need to ensure that our engineering efforts lead to well-informed decision-making, measured by generally accepted societal values. This has deep technical implica-

tions as well as novel capacity-development challenges.

- Integrating Digital Solutions in Specific Environments

We need to pay increasingly more attention to integrating digital solutions in specific environments. For example, for social environments, the results of digitalization should be perceived as being a natural part of our environment and society. Analogously, this holds also when blending digitalization into an industrial environment, or when integrating digitalization into our natural environments.

- Developing Digital Technologies

We need to develop digital technologies, in particular technologies that one can effortlessly use and justifiably rely upon. Digitalization should thus lead to safe, trusted and resilient systems. Justifiably relied upon not only means that a technology seems to be doing what it is supposed to do, but that this is indeed the case.

Excellence is a key issue. The institute's new project Living Smart Campus forms a linking pin between all research activities, and is as such profiling for 'Science for a Smart Society'. The Campus becomes a center of open innovation, to which also industry, government bodies and citizens are committed.

Various departments are joining efforts in these centers to address research challenges in an interdisciplinary way. More information on the centers can be found via <https://www.utwente.nl/en/digital-society/>

CURRENT RESEARCH PROJECTS

DSI is active in dozens of research projects financed at the national and European level and directly by industry. Departments directly related to ERCIS research themes are the IEBIS (Industrial Engineering and Business Information Systems) group and the SCS (Services, Cybersecurity and Safety research group).

The IEBIS group is concerned with studying novel ways of managing business processes and supply chains using innovative techniques such as simulation, (social) data mining, multi-agent coordination and gamification. Researchers in IEBIS use design science methods to develop Decision Support Systems and Inter-Organizational Systems connecting networks of businesses and governments.

The goal of the SCS group is to develop methods and techniques for developing IT-based services that balance service levels with safety- and security levels, and to develop methods and techniques that make existing IT-based services more secure.

Selected research projects include:

Social media content analysis – Data-driven service development. Integrating Internet and social media content reports with internal log data for service development decisions.

SynchromodalIT – This project aims at designing advanced algorithms and business-IT architectures to facilitate dynamic planning of logistics across various modalities.

Sharebox – Industrial Symbiosis for sustainable industry (EU Project).

AWARDS

The N.W.O funded several projects for PhD and postdoc positions in the IEBIS department in the area of complexity in networks and Internet of Smart operations for Healthcare and Things and Big Data in Logistics.

EVENTS

A free open online course (MOOC) was developed on Supply Chain Innovation. It was run throughout 2016 and 2017. Over 10,000 students enrolled and participated in the discussions. The course was developed in a collaborative effort of several researchers of the University and industry. The central theme was how to use ICT to innovate supply chains and achieve more sustainability. The course materials

were closely linked to ongoing research projects. The course will be evaluated and renewed to run again in 2018/2019, see <https://www.futurelearn.com/courses/supply-chain-innovation>

PUBLICATIONS

A Aldea, ME Iacob, J van Hillegersberg, D Quartel, H Franken, Strategy on a Page: An ArchiMate-based tool for visualizing and designing strategy, *Intelligent Systems in Accounting, Finance and Management* 25 (2), 86-102.

A Dobrkovic, ME Iacob, J van Hillegersberg, Maritime pattern extraction and route reconstruction from incomplete AIS data, *International Journal of Data Science and Analytics* 5 (2-3), 111-136.

Chandra, D. R., & van Hillegersberg, J. (2018). Governance of inter-organizational systems: a longitudinal case study of Rotterdam's Port Community System. *IJISPM-INTERNATIONAL JOURNAL OF INFORMATION SYSTEMS AND PROJECT MANAGEMENT*, 6(2), 47-68.

A Aldea, ME Iacob, A Wombacher, M Hiralal, T Franck, Enterprise Architecture 4.0: A vision, an approach and software tool support, 22nd IEEE International Enterprise Distributed Object Computing Conference.

G van Capelleveen, C Amrit, DM Yazan, H Zijm, The influence of knowledge in the design of a recommender system to facilitate industrial symbiosis markets, *Environmental Modelling & Software*.

G van Capelleveen, C Amrit, DM Yazan, A literature survey of information systems facilitating the identification of industrial symbiosis, *From Science to Society*, 155-169.

DISSERTATIONS

Anticipatory Freight Scheduling in Synchro-modal Transport, *A Pérez Rivera*, Doctoral Thesis, University of Twente.

From fishing to phishing, *Lastdrager, E. E. H.* 9 Feb 2018.



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Scientific Director:
Prof. Dr. Maarten van Steen

Enterprise strategic alignment method: a cross-disciplinary capability-driven approach, *Aldea, A.* 6 Apr 2017 Enschede: Universiteit Twente. 346 p.

All publications are available at doc.utwente.nl

LEIDEN UNIVERSITY – LEIDEN INSTITUTE OF ADVANCED COMPUTER SCIENCE (LIACS)

› Leiden University – Leiden Institute of Advanced Computer Science (LIACS) <http://liacs.leidenuniv.nl>



Universiteit Leiden The Netherlands

ABOUT THE INSTITUTION

The Leiden Institute of Advanced Computer Science (LIACS) is a center of excellence for multidisciplinary research and education in computer science and artificial intelligence (AI).

LIACS performs research within a number of themes. We concentrate on the study of theoretical foundations and formal methods, and focus on applications in the field of artificial intelligence and data science. We support CLAIRE in their aim to strengthen European excellence in AI research and innovation. And we cooperate with knowledge institutes, governments and corporate organizations. As a consequence of our broad and international working field, we offer complete and outstanding education.

RESEARCH TOPICS

Collaboration for Smart Industry: At LIACS we have a strong focus on providing Smart Computing for Science & Industry. This focus materializes in our longstanding cooperation with industrial partners and governments. These collaborations help us to focus on the applicability of research results and at the same time generate new directions for our research in computer science.

On the one hand, collaborative research adds significant value to the development of the economy. It enhances the innovative potential, which in turn strengthens the competitive position. On the other hand, your business challenges inspire our researchers to rethink the way they do research and invite them to look for new opportunities beyond their existing landscape. That way we do not only support you in developing your competitive position, but also continuously refresh our research.

Our collaborations include partners such as Honda Research, Zorginstituut Nederland, Tata Steel, Greenchoice, BMW, KLM, General Electrics Aviation, Young Capital, Qualogy, Ministry of Foreign Affairs, National Police, Woonconnect, Stabiplan, and De Nederlandsche Bank.

Applied Data Science Lab: Although science and education have top priority, exploratory projects with companies, governments and NGOs generate ample opportunities in terms of societal challenges, science strategy, valorization and research collaboration. In the LIACS Applied Data Science Lab, our master's students and graduates carry out short-term exploratory studies.

Until recently there was a mismatch between short-term company needs and the typical time horizon of research projects: a missed opportunity both for companies as well as for LIACS.

That is why we have developed the Applied Data Science Lab at LIACS. This lab is a vehicle that allows for students, graduates and Postdocs to work part time for different organizations on exciting projects, supervised and managed by LIACS top researchers.

Unique opportunity for companies and students: Education is the means to develop expertise, analytical skills and social competences in various ways. The Applied Data Science Lab provides a unique opportunity for you to learn about practical aspects of data science and for students to be inspired and to go beyond the ordinary.

Since the applied Data Science Labs' prime purpose is to help clients explore their opportunities in data science whilst gaining working experience for the student, we charge a break even rate, plus a small markup for administrative efforts and supervision.

At the moment we are working with Greenchoice, Ministry of Foreign Affairs, university finance department, Young Capital, Volvo Ocean Race, and others.
<http://liacs.leidenuniv.nl>

CURRENT RESEARCH PROJECTS

The HORIZON 2020 Research and Innovation Staff Exchanges (RISE) project RISE_SMA "RISE Social Media Analytics", with University Duisburg-Essen (ERCIS Partner), Agder University, Kristiansand (ERCIS partner), and others. The role of LIACS is to devise algorithms for complex network analysis and visualization, and support the work packages on text mining.

ERCIS competence center (see <https://www.ercis.org/about-us/competence-centers>) on "Social Media Analytics: Identification and Analysis of Disinformation, Propaganda, and Manipulation via Online Media".

LIACS is involved in many other research projects and topics.

See <http://liacs.leidenuniv.nl> for an overview.

EVENTS

Researchers from LIACS (Michael Emmerich, André Deutz) and the Mathematical Institute of Leiden University (André Deutz) organized the LeGO 2018 – 14th International Global Optimization Workshop, 18-21 September in Leiden. It will be published by AIP Web of Science indexed proceedings.

Researchers from LIACS, in particular Prof. Holger Hoos, were leading in initiating the CLAIRE initiative to promote research on responsible artificial intelligence in Europe. <https://claire-ai.org/>

DISSERTATIONS

Stein, Bas van: Data Driven Modeling & Optimization of Industrial Processes.

Bezirgiannis, Nikolaos: Abstract Behavioral Specification: Unifying Modeling and Programming.

Kaifeng Yang: Multi-objective Bayesian global optimization for continuous problems and applications.



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SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS – INFORMATION SYSTEMS DEPARTMENT

› Simon Kuznets Kharkiv National University of Economics (KhNUE) – Information Systems Department ei.hneu.net



ABOUT THE INSTITUTION

Simon Kuznets Kharkiv National University of Economics is the leading higher education institution of the Eastern Ukraine, which provides a full range of educational services, carrying out multistage training, retraining and upgrading experts' skills in 15 specialties, such as Economics and Entrepreneurship, Management and Administration, Information Systems and Computer Science, Publishing and Printing Business.

The Information Systems Department has 37 professors, 322 students on bachelor level, 111 on master level and 1 PhD student. The department is an active member of the IT Ukraine Association and the Kharkiv IT cluster. 15 professors are Microsoft certified specialists. The Microsoft IT Academy works since 2009, the IBM Academic Centre "Smarter Commerce" - since 2012.

The Master Double Diploma Programme "Business Informatics" offered together with University Lumiere Lyon-2, France was established in 2005. According to research of SMBG Consulting Group, the programme is included in the top 10 Master programmes in Business Intelligence in France in 2012–2017. The programme graduated more than 223 students.

Simon Kuznets Kharkiv National University of Economics has about 7769 students (including 1494 foreign students), 701 faculty members and offers training primarily structured around the new teaching architecture of the higher education. Having a considerable experience in training Ukrainian students, KhNUE influences HR, scientific, technical and economic policy of industrial enterprises and organisations in the country. The University trains highly skilled economists familiar with modern information technologies and innovative models of behavior. The University established a flexible system of quality specialists preparation management, based on continuous monitoring of KhNUE graduates' achievements.

RESEARCH TOPICS

The majority of Simon Kuznets Kharkiv National University of Economics Information Systems Department research activities are carried out within the following topics:

- Mobile technologies in operative management of an enterprise.
- Monitoring System(s) for scientific research in higher education.
- Fuzzy logic and modelling in logistics and marketing.
- Information security
- Distributed data warehouses
- Knowledge base and artificial intelligence

- Innovative computer technologies in higher education

CURRENT RESEARCH PROJECTS

Horizon 2020 EQUAL-IST – **Gender Equality Plans for Information Sciences and Technology Research Institutions**. EQUAL-IST aims at introducing structural changes to enhance gender equality within Information Systems and Technology Research institutions, which have been demonstrated to be among the research sectors most affected by gender inequalities at all levels.

ERASMUS+ CBHE MASTIS – **Establishing Modern Master-level Studies in Information Systems**. The wider objective is to improve the Master Programme in Information Systems according to the needs of the modern society; to bring the universities closer to changes in the global labour market and the world education sphere; to enable them to stay responsive to employers' needs; to give students an idea of various job profiles in the Information Systems domain.

ERASMUS+ CBHE FabLab – **Development of a network infrastructure for youth innovation entrepreneurship support on fablab platforms**. The wider objective is to develop an environment that stimulates engineering creativity, entrepreneurial activities and fosters youth employability via HEIs-business-industry networking on fabrication laboratory platforms.

ERASMUS+ CBHE DocHub – **Structuring cooperation in doctoral research, transferable skills training, and academic writing instruction in Ukraine's regions**. One of the project objectives is to establish inter-HEI subject-specific research network in Information Systems that is integrated through regular seminars and co-supervision of PhD students.

ERASMUS+ CBHE C3QA – **Promoting internationalization of research through establishment and operationalization of Cycle 3**

Quality Assurance System in line with the European Integration Agenda. Specific project objectives are to establish an external and internal quality assurance system to promote the quality of Cycle 3 programs and to promote internationalization of the Cycle 3 programs with joint efforts of the key stakeholders and cross-regional cooperation. The IS department of KhNUE will work on the establishment of a QA system for the PhD programme in Information Systems.

ERASMUS+ CBHE EDUQAS – **Implementation of Education Quality Assurance system via cooperation of University-Business-Government in HEIs**. The wider objective of the project is to improve education quality assurance systems through the development of efficient internal quality standards leading to better employability of students in partner countries' universities. The IS department of KhNUE will work on the establishment of a QA system for bachelor and master degree programs in Information Systems.

Cryptographic means for information protection in banking systems. Developing differential game models of cyber-attack processes in systems for bank information protection. Developing optimal strategies for information security in banking systems.

Modern simulation technology and designing of information systems and management objects. Computer imitational modeling of industrial and commercial systems.

CONFERENCES

IX Annual International Conference "IT Industry Development: Problems and Perspectives".

EVENTS

Prof. Zolotaryova served on the program committees of the following international conferences: ManComp 2018 -3rd Workshop on Managing Complexity, BIR 2018 International Conference on Perspectives in Business Informatics Research, Euro-Symposium 2018 on Systems Analysis and Design.

She was editor of The International Journal of Statistics and Application (Romania), Utilizing Big Data Paradigms for Business Intelligence (France).

Prof. Rudenko was a member of the editorial boards of the following journals: Bionics of intelligence, Information Systems and automation equipment, Herald of Chernivtsi University, Adaptive control systems, Problems of information technologies.

AWARDS

Iryna Zolotaryova – Chevalier of the Order of Academic Palms from the Ministry of National Education of French Republic.

PUBLICATIONS

Rudenko O., Bezsonov O., Lebediev O. Adaptive control over nonlinear objects using the robust neural network FCMAC // Eastern-European Journal of Enterprise Technologies. – 2018. – № 2/4 (92). – P.63–69.

Rudenko O.G., Bezsonov AA. Neural network approximation of nonlinear noisy functions on the basis of a co-evolutionary cooperativecompetitive campaign // Problems of management and informatics. -2018. - №3. - p. 5-14.

Plekhanova G., Plokha O. Using the Crowdsourcing Online-Platform as IT Tool for Gender Equality Plan Development // Advanced Computer Information Technologies: Proceedings of the International Conference, June 1-3, 2018, Ceske Budejovice, Czech Republic. - PP. 250-253.

Zolotaryova I., Plekhanova G., Plokha O. Case Study: Development of the Concept of the Corporate Web-Portal of the Bank "Credit Agricole" // "KhPI". Series: System Analysis, Control and Information Technologies. -2018. - №22. - p. 45-52.

Ushakova I., Makapova G. Creating an algorithm for selecting business partners using DATA Science methods // Information processing systems. - 2018 - No. 2 (153).



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PROF. IRYNA ZOLOTARYOVA

Member of the Ukrainian Higher Education Reform Experts Team, Head of Ukrainian-French Master Double Diploma Programme "Business Informatics", Information Systems Department

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Malyaretz L., Dorokhov O., Dorokhova L. Method of constructing the fuzzy regression model of bank competitiveness // Journal of Central Banking Theory and Practice. - 2018. - № 2. - pp. 139-164.

Dorokhov O., Chernov V., Dorokhova L., Stremkis J. Multi-Criteria choice of Alternatives under Fuzzy Information // Transformations in Business & Economics. - 2018. - № 2. - pp. 95-106.

LOUGHBOROUGH UNIVERSITY – CENTRE FOR INFORMATION MANAGEMENT (CIM) – SCHOOL OF BUSINESS AND ECONOMICS



ABOUT THE INSTITUTION

Situated very close to East Midlands Airport (13 km), Loughborough University is 182 km north of London. The campus is the largest in the UK in terms of its size, and the student population of the university is close to 20,000. The origins of the institution are in 1909 when the Loughborough Technical Institute was founded, but it was in 1966 that a university charter was granted. Since then, Loughborough University has risen in stature and is today regarded as one of the UK's top ten universities. Currently it is "University of the Year" according to The Times Newspaper. This success is built upon excellence in Science and Engineering, Sport, and significant academic success in Business and Economics, Computer Science and other disciplines. Since 2015, Loughborough University has a second campus at the Queen Elizabeth Olympic Park in London.

The School of Business and Economics of Loughborough University is one of the most renowned business schools in the UK and has triple-accreditation of the MBA programme via AACSB, EQUIS and AMBA. The Centre for Information Management (CIM) is located within the School of Business and Economics as one of its key research hubs. CIM is concerned with the application and implications of modern IT, through digitization, the digital economy and through the development of the theory base of Information Systems.

RESEARCH TOPICS

The Centre for Information Management (CIM) has thirty academic associate members, a similar number of PhD students and visiting faculty from academia and industry. CIM carries the aim of "transforming the digital world by conducting research that matters." This conveys the commitment of the group members to work on issues of significance that improve the functioning of society at this time of great technological change. The research topics highlighted here are extracted from the wider body of work within CIM in order to represent the range and span of work within CIM.

Artificial Intelligence and Robotics in Organizations: Dr. Coombs is working to develop work undertaken with the Chartered Institute of Personnel Development on the question of how advanced machines are having impact on knowledge jobs and service work.

Digital marketing: Professor Holland focuses his research on understanding the nature of online search and buying behaviour in consumer markets using a combination of panel data, case studies and laboratory-based experiments. Working with Dr Argyris, Professor Holland is seeking to develop mathematical models of the consumer search process using detailed web server data from a range of e-commerce companies.

Power Dynamics in Organizations: Dr. Simeonova and Professor Galliers are leading research on power dynamics in organizations, and the role of IS within that. This features as a special call to the Information Systems Journal and a forthcoming special issue in 2019.

Sustainable Supply Chain: Dr. Choudhary works on issues of sustainable supply-chain, including the contribution of advanced digital capabilities to it. As the international significance of his work has grown, this year there have been reciprocal visits to IIT Delhi.

CURRENT RESEARCH PROJECTS

Cognitive Investigations of Decisions

Tony Dawson is a PhD candidate in CIM. Working with Professors Jackson, Roberts and Kawalek, Tony undertakes experiments based upon Functional Near-Infrared Spectroscopy (fNIR). This allows Tony to record and interpret brain function during different tests, such as receipt of Powerpoint information for learning or professional briefing. Future studies will investigate issues of Attention Economy, exploring how users divide cognitive resource between different tasks.

Early Career Researcher Profile, Dr. Konstantina Spanaki

Konstantina's research focuses on data as an artefact flowing across and around the supply chain, with a specific focus on

data attributes, quality characteristics and access control. Applications of the data sharing approaches have been presented in Computers in Industry (Karafili et al 2018) and a wider conceptualization in International Journal of Production research (Spanaki et al 2018). Konstantina is currently studying data sharing in contextual environments, including smart factories, agriculture and Industry 4.0.

Director Profile, Professor Peter Kawalek

The Director of the Centre for Information Management is Professor Peter Kawalek who has worked with a significant range of organizations including IBM, SAP, Manchester City FC., New York City FC., Siemens, Office an Taoiseach, Salford City Council and Leeds City Council. His work has been published in journals including California Management Review, Journal of Information Technology, Information & Management and Information & Organization. On behalf of CIM, Peter welcomes collaboration with ERCIS members including joint research applications, receiving visiting lecturers, and collaborative data projects.

SELECTED PUBLICATIONS

Bailur, S., Masiero, S. and Tacchi, J., 2018. Gender, Mobile, and Mobile Internet| Gender, Mobile, and Development: The Theory and Practice of Empowerment—Introduction. Information Technologies & International Development, 14, p.9.



Dr. Crispin Coombs

Coombs, C., Hislop, D., Taneva, S. and Barnard, S., 2019. The changing nature of knowledge and service work in the age of intelligent machines. Oxford University Press.

Holland, C.P. and Gutiérrez-Leefmans, M., 2018. A Taxonomy of SME E-Commerce Platforms Derived from a Market-Level Analysis. International Journal of Electronic Commerce, 22(2), pp.161-201.

Karafili, E, Spanaki, K, Lupu, E (2018) An Argumentation Reasoning Approach for Data Processing, Computers in Industry, 94, pp.52-61. DOI: 10.1016/j.com-pind.2017.09.002.

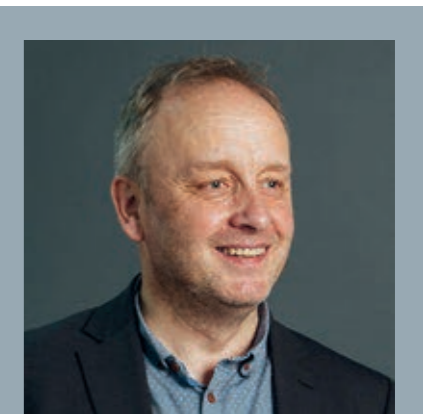
Karimi, S., Holland, C.P. and Papamichail, K.N., 2018. The impact of consumer archetypes on online purchase decision-making processes and outcomes: A behavioural process perspective. Journal of Business Research, 91, pp.71-82.

Morton, J., Stacey, P. and Mohn, M., 2018. Building and Maintaining Strategic Agility: An Agenda and Framework for Executive IT leaders. California Management Review, p.0008125618790245.

Simeonova, B., 2018. Transactive memory systems and Web 2.0 in knowledge sharing: A conceptual model based on activity theory and critical realism. Information Systems Journal, 28(4), pp.592-611.



Prof. Chris Holland



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Spanaki, K, Gurguc, Z, Adams, R, Mulligan, C (2018) Data Supply Chain (DSC): Research Synthesis and Future Directions, International Journal of Production Research, 56(13), pp.4447-4466. DOI: 10.1080/00207543.2017.1399222.

DISSERTATIONS

Dr. Julia Jacobs successfully defended her thesis titled "Online Consumer Search Behaviour: Paths and Patterns of Flight Ticket Search", jointly supervised by Prof Holland at Loughborough University and Prof Klein at Münster University. Dr Vipin Chauhan defended his thesis entitled "Knowledge brokering: An insider action research study in the not-for-profit sector," continuing a substantial tradition for CIM in the topic of Knowledge Management. It was supervised by Drs Ragsdell and Goutas.

STEVENS INSTITUTE OF TECHNOLOGY – SCHOOL OF BUSINESS

› Stevens Institute of Technology – School of Business stevens.edu/business



ABOUT THE INSTITUTION

Founded in 1870, Stevens Institute of Technology is a premier private university focused on research and entrepreneurship in technology-related fields. Located across the Hudson River from Manhattan in Hoboken, New Jersey, Stevens has a population of 3,793 graduate (master's and PhD) students and 3,123 undergraduate students. Stevens is committed to exploring the frontiers of engineering, science, and management through integrative research and education programs. Stevens' three schools and one college support the mission of the Institute: The School of Engineering and Science, the School of Business, the School of Systems and Enterprises, as well as the College of Arts and Letters.

Stevens is regularly listed in the top 3% of US universities based on student return on investment. Notable graduates include Frederick Winslow Taylor, the father of scientific management, Henri Gantt, whose GANTT chart is a staple in most project manager's toolkits, and Alfred Fielding, the inventor of the Bubble Wrap.

The School of Business has 61 full-time faculty, 430 undergraduates, 900 MS students, 150 MBA students, 80 executive master's students, 25 PhD students and

numerous non-degree graduate and executive programs. Within the school, the Information Systems group is among the largest graduate programs in the US, with a mix of evening and weekend classes, as well as online course offerings to students around the globe.

RESEARCH TOPICS

Within the School of Business, two IS-related research groups operate in the areas of Business Process Innovation and Decision Technologies.

The Center for Decision Technologies (CDT), directed by Prof. Jeffrey Nickerson, performs funded research on topics related to decision making, combining perspectives from information systems, management science, organization science, cognitive science, social network analysis, and other computational sciences.

The Center focuses on bringing needed techniques to several areas. In the area of crowdsourcing and collective intelligence, it is now possible to quickly mobilize a crowd in minutes to address large-scale social problems. One example of ongoing research relates to the open source sharing of designs for use with 3D printers. Researchers at the CDT are interested in

the role that crowds can play in sustainability – finding local solutions to energy needs that fulfill communities' objectives. In the area of social networks and Big Data, research at the Center focuses on the intersection of transportation and communication networks. In many recent large-scale natural disasters, social media infrastructure has proven more resilient than traditional news outlets. At the same time, rumors propagate, and inaccurate ones impede rescue and recovery, which has led to a research interest in designing social media processes that will be useful during emergencies.

The Center received funding in excess of \$4 Million during the last 4 years, from the National Science Foundation and other sources.

The Center for Business Process Innovation (CEBPI) studies the interplay between business processes and the organization. Under the direction of Prof. Michael zur Muehlen, the Center's research activities have been organized around several key issues.

The Center's research on Business Process Analytics is examining how to advance the family of methods and tools that can be

applied to event streams in order to support decision making in organizations. Research is also being conducted in the area of enterprise architectures, which contain analytical or prescriptive models of organizations, in order to efficiently identify organizational and technical interfaces, streamline cross-functional operations, and assert compliance to rules and regulations. Researchers at the CEBPI are also interested in understanding the dynamics of digitalized design processes and the impact of digital technology on business process innovation.

Research at the CEBPI focuses on how organizations evolve in their ability to govern and change operational work and decision-making processes. Some organizations begin by creating technical infrastructure and working out organizational adaptations, while others try to work out organizational details first before choosing appropriate technology. In either approach, the roles and responsibilities of a process support and management organization evolve over time, and little guidance exists as to how organization can pursue operational efficiency in a repeatable and effective fashion.

CURRENT RESEARCH PROJECTS

Recent research at the CDT focuses on the relationship between routines and innovation in design contexts, such as those with "open source-like" characteristics, to better understand the variables and phenomena such as routine variation, sequential structuring, structural evolution, and temporal modes as well as their impacts on design outcomes such as effective coordination, digital artifact innovation, and requirements computation.

Recent research at the CEBPI aims to understand the skills, positions, and organizational structures of change management professionals in industries under different regulatory intensities. Additional research projects focus on the opportunities of digital technologies such as Robotic Process Automation, Cognitive Computing, and Blockchain on the design of business processes, and the changing skills of workforces to survive in the age of smart business processes.

SELECTED PUBLICATIONS

Wang, K., Nickerson, J., Sakamoto, Y. „Crowdsourced idea generation: The effect of exposure to an original idea," in *Creativity and Innovation Management* 27(2), pp. 196-208.

Gandomi, A.H., Kashani, A.R. „Probabilistic evolutionary bound constraint handling for particle swarm optimization," in *Operational Research* 18(3), pp. 801-823.

Kratzer, S., Lohmann, P., Roeglinger, M., Rupprecht, L., zur Muehlen, M. „The role of the chief process officer in organizations", *Business Process Management Journal*, forthcoming.

Mai, F., Ford, M.W., Evans, J.R. „An empirical investigation of the Baldrige framework using applicant scoring data," in *International Journal of Quality and Reliability Management* 35(8), pp. 1599-1616.

Li, B., Hernandez, I., Milburn, A.B., Ramirez-Marquez, J.E. „Integrating uncertain user-



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generated demand data when locating facilities for disaster response commodity distribution," in *Socio-Economic Planning Sciences* 62, pp. 84-103.

Bonini, S., Capizzi, V., Valletta, M., Zocchi, P. „Angel network affiliation and business angels' investment practices," in *Journal of Corporate Finance* 50, pp. 592-608.

Ben-Zvi, T. "Learning automata decision analysis for sensor placement," in *Journal of the Operational Research Society* pp. 1-10.

DISSERTATIONS/HABILITATIONS

Zhu, Siwei: *Creating Innovators through Knowledge Networks: Theory and Evidence.*

Lohmann, Patrick: *The Digital Enterprise: On the Configurations of Managers, Technology Architects, and Business Processes.*

PERSONAL MEMBERS



ERCIS members at this year's ERCIS@ECIS in Portsmouth

PERSONAL MEMBERS

Apart from associated partner institutions, advisory board members, and competence centers, the ERCIS network occasionally also welcomes personal members. Those dedicated researchers are experts in their field of research and have strong personal connections within the network.

To receive a membership of a personal member, you should already have worked with partners from the network in the context of research projects, joint courses, or publications. Furthermore, you should plan or already have your career in the academic world, beyond your PhD studies. Finally, a recommendation from someone inside the network might strengthen your motivation to become a personal member.

This year we welcome three new personal members.

Welcome to Christian, Jens, and Marco!



About Me:

My research interests comprise service science, business process management, information modeling, and the socio-technical design of information systems. A particular focus is designing information systems that enable service-oriented business models. Apart from conducting several projects for the German government, I am involved in the RISE_BPM project that networks many ERCIS members in the field of business process management. I am a member of the editorial boards for Business & Information Systems Engineering (BISE) and the Journal of Business Research (JBR), and a guest editor for the Information Systems Journal (ISJ). Currently, I am President of the Special Interest Group

on Services (SIGSVC) in the Association for Information Systems. Here, my mission is to network service researchers from different backgrounds to shape the future agenda of the service science field.

SELECTED PUBLICATIONS

Beverungen, D., Lüttenberg, H., Wolf, V. (2018). Recombinant Service Systems Engineering. Business & Information Systems Engineering, 60(5), pp. 377-391.

Beverungen, D., Müller, O., Matzner, M., Mendling, J., vom Brocke, J. (2017). Conceptualizing Smart Service Systems. Electronic Markets, forthcoming.

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About Me:

I am an Associate Professor at the University of Tuscia, where I teach Organization Theory and Management of Information Systems. I am member of the board of advisors of the PhD course in Economics, Management and Quantitative Methods.

My research activities focus on the impact of ICT on communication and coordination of teams and organizations. Currently I am studying how digital platform impact the coordination among people and organization, specifically focusing on how social media platforms support and constrain the management of communities for collective action. I am also exploring how digital plat-

forms support sustainable public sector by exploring collaborative consumption and circular economy applications.

SELECTED PUBLICATIONS

Braccini, A. M., Za, S., & Sæbø, Ø. (2018). A Collaborative Discourse or Only a Collection of Voices? An Exploratory Study of the Use of Social Media in the e-Participation Domain. In ECIS 2018.

Hofmann, S., Sæbø, Ø., Za, S., & Braccini, A. M. (2018). Exploring Public Sector's Roles in Collaborative Consumption – A Research Agenda. In Edelmann et al. (Eds.), Electronic Participation, ePart 2018 (pp. 103–114).

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About Me:

Until December 2018, I have been an Assistant Professor in Digital Media in the Public Sector at the University of Bremen, Germany. My research interests cover the area of digitalization in the public sector, especially the adoption of e-government services and the use of social media in the public domain. In 2018, I have worked on research projects dealing with the potentials of sharing economy in the public sector as well as with public sector managers' role for the success of IT adoption. I am also involved in community activities, for example, I am a board member of the German Association for Junior (Assistant) Professors.

From 2019 on, I will join the department of Information Systems at the University of Agder in Kristiansand, Norway, as an Associate Professor.

SELECTED PUBLICATIONS

Hofmann, S., Ogonek, N. (in press). Different but still the same? How public and private sector organisations deal with new digitalisation competences. *Electronic Journal of E-Government (EJEG)*.

Hofmann, S., Sæbø, Ø., Za, S., Braccini, A.M. (2018) Exploring Public Sector's Roles in Collaborative Consumption – A Research Agenda. *EGOV-CeDEM-ePart 2018*, Krems, Austria.

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Open-Minded

About Me:

I am head of the research group „Professional Communication in Electronic Media/Social Media“ and principal investigator of the research training group “User-Centred Social Media” (DFG-Graduiertenkolleg) at University of Duisburg-Essen. My research is focused on the topics of Enterprise Collaboration and Social Media Analytics. Currently, we are working in several funded projects.

Two selected projects are: “Design Thinking for Industrial Services” is funded by the German Federal Ministry of Education and Research until 2019. It is the goal of the project to design and evaluate instruments for virtual collaboration in order to increase SME's ability to innovate. Also

funded by the German Federal Ministry for Education and Research we cooperate with the RTWH Aachen to investigate the habits of researchers concerning the management of their research data. The objective of the two years collaborative project titled UNEKE is the development of criteria for the establishment of research data infrastructures at universities.

SELECTED PUBLICATIONS

Stieglitz, S., Meske, C., Ross, B., Mirbabaie, M. (2018). Going Back in Time to Predict the Future – The Complex Role of the Data Collection Period in Social Media Analytics. *Information Systems Frontiers*, 1-15.

Stieglitz, S., Mirbabaie, M., Ross, B. & Neuberger, C. (2018). Social Media Analytics – Challenges in Topic Discovery, Data Collection, and Data Preparation. *International Journal of Information Management*, 39, 156-168.

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About Me:

Oliver Müller is Professor of Management Information Systems and Data Analytics at Paderborn University. He holds a BSc and MSc in Information Systems and a Ph.D. from the University of Münster's School of Business and Economics. In his research, Oliver studies how organizations create value with (big) data and analytics; for example, by enhancing judgement and decision making, supporting knowledge management, or automating business processes. His research has been published in the *Journal of Management Information Systems*, *Journal of the Association of Information Systems*, *European Journal of Information Systems*, *European Journal of Operational Research*, and various others.

SELECTED PUBLICATIONS

Müller, O., Fay, M., & vom Brocke, J. (2018). The effect of big data and analytics on firm performance: An econometric analysis considering industry characteristics. *Journal of Management Information Systems*, 35(2), 488-509.

Schmiedel, T., Müller, O., & vom Brocke, J. (2018). Topic Modeling as a Strategy of Inquiry in Organizational Research: A Tutorial With an Application Example on Organizational Culture. *Organizational Research Methods*, Online First.

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About Me:

I'm currently Assistant Professor of Organization Studies and Information Systems at University “G. d'Annunzio” of Chieti-Pescara (Italy), adjunct professor at LUISS University and visiting professor at the EM Strasbourg Business School. In 2017 and 2018 I was visiting scholar at the University of Agder (Norway). I'm the Secretary of the Italian chapter of AIS (<http://www.itaais.org>) since 2008, and member of program committees and reviewer for national and international conferences and journals in domains of Information Systems and Organization Studies. My main research interest is the analysis and design of digital artefacts and organizational systems.

I'm currently focused on digital innovations and business transformation affecting people and organizations in the digital ecosystem. I was editor for several books and journal special issues. I have also published a book, papers on international conferences, book series and journals.

SELECTED PUBLICATIONS

Braccini A. M., Za S., and Sæbø Ø. (2018), A collaborative discourse or only a collection of voices? An exploratory study of the use of social media in the e-participation domain. In *Proceedings of the 26th European Conference on Information Systems (ECIS)*, Portsmouth, UK, June 23-28, 2018.

Za S., Spagnoletti P., Winter R., and Mettler T. (2018), Exploring Foundations for Using Simulations in IS Research, *Communications of the Association for Information Systems (CAIS)*, Vol. 42, Article 10.

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About Me:

I am head of the Chair of Industrial Sales and Service Engineering in the Mechanical Engineering Department at the Ruhr-Universität Bochum. My main research interests are in the areas of industrial sales, service, and innovation management. In particular, my team and I investigate how the innovation of industrial services can be supported methodically and technically. Our work enables enterprises to develop novel and digitally enabled B2B service offerings as well as efficient service processes. Amongst others, I am one of the principal investigators of the consortium projects Design Thinking for Industrial Services (DETHIS) and Smart Service Retrofits for Highest Availability of Machinery and

Equipment (retrosmart), funded by the German Federal Ministry of Education and Research (BMBF).

SELECTED PUBLICATIONS

Pöppelbuß, J. & Lubarski, A. 2018. A Classification Framework for Service Modularization Methods, Enterprise Modelling and Information Systems Architectures (EMISA), (13:14), 1–22.

Galipoglu, E., Kotzab, H., Teller, C., Yumurtaci Hüseyinoglu, I. Ö. & Pöppelbuß, J. 2018. Omni-channel retailing research – state of the art and intellectual foundation, International Journal of Physical Distribution & Logistics Management, (48:4), 365–390.

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About Me:

Since 2017, I have been assistant professor of information systems at Freie Universität Berlin in cooperation with the Einstein Center Digital Future (board member since 2018). Before that, I completed my doctorate at the University of Münster in 2015 and took on the coordination of the DFG graduate school “User-Centred Social Media” at the University of Duisburg-Essen. My research focus is on communication and collaboration technologies within enterprises, digital workplace transformation and digital nudging. In an exemplary project, I investigate the design and impact of social bots in enterprise social networks. In another project, I study aspects that influence the employee’s attitude towards

the rapid digital transformation of their work environment. Methodically, I apply instruments of design science as well as social computing.

SELECTED PUBLICATIONS

Meske, C. and Potthoff, T. (2017). The DINU Model – A Process Model for the Design of Nudges. 23rd European Conference on Information Systems, 2587-2597.

Riemer, K., Stieglitz, S. and Meske, C. (2015). From Top to Bottom: Investigating the Changing Role of Hierarchy in Enterprise Social Networks, Business Information Systems Engineering (BISE) (57:3), 197-212. (AIS Best Information Systems Papers of the Year Award)

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About Me:

Marco De Marco is full professor of Organization and Information Systems at Università Internazionale Telematica UNINETTUNO in Rome where he serves also as Dean of the Faculty of Economics. He is the author of four books and numerous essays and articles; mainly on the development of information systems, the impacts of technology on organizations and e-government. He is a member of the editorial board of several academic journals. In 2008 and 2009 he was a Board committee member of the Association for Information Systems, representing Europe, Africa, and the Middle East. His main research interests have included information systems development and performance measure-

ment methodologies, while bank information systems and their specificities were a particular study and focus. He has been serving as officer of the major conference on Information Systems ICIS, ECIS, MCIS and he was cofounder of the Italian chapter of the AIS. At ICIS 2010 he was awarded the AIS Fellow Prize for his contribution to the IS discipline.

SELECTED PUBLICATIONS

Sorrentino, M., Badr, N.G., De Marco, M. (2017). Healthcare and the co-creation of value: Qualifying the service roles of informal caregivers. Lecture Notes in Business Information Processing.

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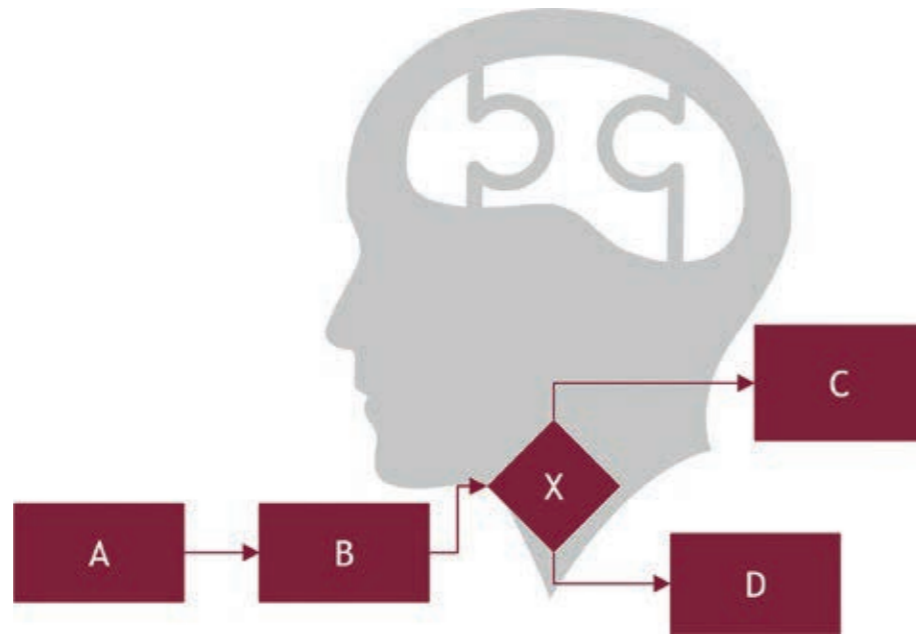
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CONCEPTUAL MODELING

Nowadays, conceptual modeling supports a variety of business tasks aimed to improve the productivity of companies among different industries. Conceptual models capture various aspects of a company's structure and behavior, such as business processes, business data, and organization. By documenting these aspects through diagrammatic representations provided by conceptual models, business analysts can gain a quick overview of how the company works in detail. Hence, conceptual models serve not only to document but also to analyze specific aspects of corporate reality to support economic decision-making. For instance, the use of conceptual models supports Business Process Improvement, Benchmarking, Software Customizing, Workflow Management, and Compliance Management. Due to their considerable potential to support decision-making, many companies have created large collections of conceptual models. This makes it difficult for analysts to analyze conceptual models in order to support their business tasks. Hence, the Competence Center for Conceptual Modeling focuses on the development of novel methodologies, providing automatic support for the design and analysis of conceptual modeling in different business domains. In particular, we worked on the following topics:

Model Query Languages: With query languages, analysts can search for sections in conceptual models that match a specific structure with specific contents. Such model query languages serve to, for instance, identifying inefficiencies in business processes, searching for legal violations of information systems, or generating database tables automatically from a data model. Particular query languages that we developed at the Competence Center for Conceptual Modeling are the Generic Model Query Language (GMQL) and the Diagrammed Model Query Language (DMQL). Last year, we developed a new version of the latter including extended analysis capabilities.



Business Rules Management: Business rules are prescriptions that a company has to comply with in order not to face negative monetary or legal effects. One task of Business Rules Management is to identify rules that are relevant for companies and to describe them as formal patterns so they can be applied automatically. Such patterns can be used as input for query languages, for instance, and they define model sections of interest that represent compliance violations, process weaknesses, errors or the like. In several empiric studies, we identified more than 100 query patterns that can be used in business process management projects, for instance, to identify business process compliance violations or inefficiencies. Another task of Business Rules Management is to maintain the repositories of business rules in order to cope with inconsistencies, for instance. We have developed a methodology that can identify such inconsistencies automatically and support analysts in resolving them with corresponding inconsistency measures.

Predictive Process Analytics: Predictive Process Analytics is used to learn the structure and behavior of a business process automatically from log files of business software and predict the future behavior of currently running process instances. The prediction results can be used to proactively influence process instances, for in-

stance, to assure beneficial behavior and avoid unfavorable one. We can use predictive process analytics, for instance, to support public traffic systems or tourist installations to optimize their operating rate or to avoid congestion, optimize the behavior and output of plants, or decrease fine particulate matter pollution in major cities. We have developed a generic predictive process analytics approach recently, which we currently apply in the mentioned fields.

For more information visit www.conceptual-modeling.org

SELECTED PUBLICATIONS

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CRISIS MANAGEMENT

The Competence Center for Crisis Management (C³M) integrates research efforts of the ERCIS network in the domains of crisis management and humanitarian logistics. Our main objective is to identify relevant challenges in practitioner realities and to design and evaluate appropriate socio-technical solutions. Herein C³M investigates the role of Information and Communication Technologies (ICT) concerning logistics and supply chain management in this outstanding domain. C³M integrates a collaborating network of different practitioners and research groups from the crisis management and humanitarian logistics domains. C³M concentrates on six research topics, starting at the visualization and modeling of processes up to the analysis and coordination of humanitarian relief chains. See our website for more information: crisismanagement.ercis.org



NEWS

It might sound like “same procedure as every year” but the involvement of C³M in the 15th International Conference on Information Systems for Crisis Response and Management (ISCRAM) in Rochester, USA, was again a great experience. This year, we were very happy to organize the track “Logistics and Supply Chain Management in Crisis Response” together with the internationally renowned humanitarian logistics expert Prof. Dr. Gyöngyi Kovacs from the HUMLOG Institute at the Hanken School of Economics. We are very proud to see our contributions making logistics and supply chain management to an integral part of the ISCRAM subject areas and very glad

for all the contributions from the interested authors as well as the hard work of our reviewers! Thus, it is really a pleasure to be already working hard on our track for the 16th edition in Valencia, Spain, in 2019.



After signing the Memorandum of Understanding and hosting the first annual workshop in 2017 in Münster one highlight this year was our second workshop with our partners at the Center for Collaborative Systems for Security, Safety, and Regional Resilience (CoSSar) at the University of Washington. During our visit in Seattle in May we have developed an exciting agenda of joint research activities, including collaborations in research projects and publications. Additionally, our second joint lecture, a virtual Seminar on “Challenges and Trends in Information Systems for Crisis Management”, received outstanding feedback by our students and the involved Crisis Management practitioners so that we initiated the first edition for the winter term 2018/19 as an “unconventional” conventional Masters seminar. Last but not least we need to deeply thank for the warm welcome and hosting by our partners and friends Prof. Mark Haselkorn, Dr. Robin Mays and Maike Wells. From the discussions with the whole faculty and the



Visit of the Spheres at Amazon

Chair Prof. Donald McDonald at the Human Centered and Design Department up to our guided tour at Amazon Headquarters we enjoyed every minute and are looking forward to the next steps.

Our activities in the project DRIVER+ (DRiving InnoVation in Crisis Management for European Resilience, www.driver-project.eu), funded 7th Framework Programme of the European Commission, kept the whole C³M very busy. With three to four research assistants and up to five student assistants in average there were still moments we wished a bigger team! Our highlights were definitely the first two trials in Warsaw, Poland, in May and Valabre, France, in October this year. Our team was very happy to seeing all the methodological pieces coming together as well as to observing the involved CM practitioners experiencing innovative socio-technical solutions in context of the simulated scenarios.

Another special event with the DRIVER+ Context was the 3rd Innovation for Crisis Management (I4CM) event in September this year. Next to the museum like installation of the DRIVER+ Pan-European Test-bed the C³M members contributed to two panels of the conference. Nicola Rupp shared the results on the methodological setup of the second DRIVER+ trial 2 in Valabre, France. Adam Widera contributed to the



DRIVER Trial 1 Group Picture

panel on challenges and obstacles in the sharing and coordination information during multi-agency disaster response.

We are grateful for all the exchanges and collaborations with our partners and we are looking for their continuation as well as some promising new initiatives in the next year.

SELECTED PUBLICATIONS

Proceedings of the 4th International Conference on Information and Communication Technologies for Disaster Management, *Hellingrath B, Gojmerac I, Widera A, Bendjoudi, A, de Albuquerque, JP, Sallent, O, Middelhoff, M, Yahiaoui, S (2018) ICTDM 2017*

Experiment 44 Design and Report, *Detzer, S., Gurczik G., Middelhoff, M., Widera, A., Lechner, K. (2018) Public Driver+ Report*



I4CM Panel Discussion

Report on Review and Selection Process, *Middelhoff, M., Widera, A., Rupp, N., (2018) Public Driver+ Report*

Measuring Innovations in Crisis Management, *Widera, A., Fonio, C., Lechtenberg, S., Hellingrath, B. (2018) ISCRAM 2018*

Trial Guidance Methodology and Guidance Tool Specifications, *Fonio, C., Stolk, D., van Dongen, K. Bergersen, S., Oliveira Martins, B., Widera, A., Atun, F., Wrzosek, E., Lechner, K., Rupp, N., Verkaik, J., Vermeulen, C.-J., Lichtenegger, G. (2018) Public Driver+ Report*



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Members discussing at the ERCIS workshop in Lulea



ERCIS members at MKWI

COMPETENCE CENTER E-GOVERNMENT

The E-Government Competence Center brings together members in the ERCIS network working on digitalization in the public domain. Our research covers a broad range from individuals' use of e-government technology to e-participation to process management.

Workshop of the Competence Center in Lulea/Sweden

Since e-government is a topic that several members in the ERCIS network are concerned with, and there have been several joint e-government activities during the past years, we took this year's ERCIS Annual Workshop in Lulea as an opportunity to organize a meeting with the network members interested in e-government research. The goal was to create a venue for exchange and explore further possible cooperation. We discussed different research topics and prospective projects as well as developed the idea of organizing an ERCIS e-government summer school.

Collaboration of ERCIS researchers

This fall, ERCIS members Alessio M. Braccini, Stefano Za and Tommaso Federici (associated with LUISS) and Øystein Sæbø (University of Agder, visiting Rome for seven weeks) have been working together on several research projects in the e-government field. Main research topics include the role of sharing economy within public sector (in collaboration with Sara Hofmann, University of Bremen), and the use

of technology in the Five Star Movement, an Internet-born political movement that is now member of the Italian Government. So far in 2018, this collaboration has resulted in several workshops and conference presentations as well as three journal publications in the review process.

Master's Program Public Sector Innovation and E-Governance (PIONEER)

PIONEER is a 120 ECTS joint master program organized by the KU Leuven, the University of Münster and TalTech University Tallinn. The idea behind the program is that the public sector needs interdisciplinary expertise in order to be able to benefit from the potential of ICT and technological innovations. The first cohort of the PIONEER students has spent the summer term in Münster, is currently starting the third semester in Tallinn and will afterwards write their Master Thesis at one of the three universities or within a company context. Meanwhile, the next cohort of 25 students from 18 different countries has just started in Leuven.

Study on how public leaders understand digitalization

ERCIS members in Münster and Bremen (both Germany) have conducted a study that provides insights into how leaders in public administrations understand digitalization and in how far their understanding influences employees' adoption of digitalization. Based on interviews with leaders and employees of public administrations, the study reveals that the interviewees rate

their IT-related skills as high, while they consider their colleagues and executives significantly weaker. Communication and the exemplary role of executives are seen as key success factors for the digitalization of the public sector. The central recommendation for public administrations is: Digitalization is a management task!

ICT professionals for the state of Berlin

For public administrations, it is a challenging task to acquire experts in the area of ICT as employees. One possible solution is to define the competences for these jobs in order to reach a better matching between required and existing skills. This is the first step of the project ICT Professionals for the state of Berlin that members of the Competence Center are working on. Besides defining essential job roles, important technical, socio-technical and organizational capabilities linked to these roles are developed. Knowing what civil servants working in IT need to know and which soft skills are necessary, leads to the second step: The project aims at implementing these skills into special education and training programs.

E-government track at MKWI 2018

Members of the Competence Center organized the "E-Government" track at this year's Multikonferenz Wirtschaftsinformatik (MKWI) in Lüneburg, Germany, which is one of the major conferences of the German IS community. Four papers on topics such as maturity models of government



ERCIS members Alessio M. Braccini, Øystein Sæbø, Tommaso Federici, and Stefano Za at itAIS in Pavia

websites, participation of employees in e-government projects, and blockchain in the public domain where presented, which led to lively discussions and highlight the wide range of research in this area.

Around 450 participants attended MEMO convention

This year's MEMO took place at the ERCIS headquarters in June 2018 and was attended by around 450 participants. MEMO is a convention dealing with e-government topics and bringing together German practitioners and researchers to develop new ideas to modernize the public administration.

Bettina Distel and Hendrik Scholta finished their PhDs

In 2018, two members of the E-Government team in Münster finished their PhD. In July, Hendrik Scholta successfully defended his thesis about standardization of government forms through reference modeling; Bettina Distel defended her thesis on citizens' non-adoption and adoption of e-government services in Germany in November. Congratulations to both new PhDs!

OUTLOOK ON 2019 Symposium for Information Systems in Public Administration (FTVI 2019)

In March 2019, the FTVI (Fachtagung für Verwaltungsinformatik) will take place at the University of Münster. Organized by ERCIS in cooperation with the German Informatics Society (Gesellschaft für Informatik e.V. (GI)), the biennial conference on IS in the public sector will focus on the challenges to digitize public services.

PUBLICATIONS

Ben Rehouma, M., & Hofmann, S. (2018). Government Employees' Adoption of Information Technology : A Literature Review. In Proceedings of the 19th Annual International Conference on Digital Government Research (dg.o'18), Delft.

Distel, B. (2018). Bringing Light into the Shadows. A Qualitative Interview Study on Citizens' Non-Adoption of E-Government. Electronic Journal of E-Government, 16(2), 98–105.

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Lindgren, I., Madsen, C., Hofmann, S., & Melin, U. (2018). Close Encounters of the Digital Kind. How Digitalization of Public Services Challenges the Public Encounter. Scandinavian Workshop on E-Government (SWEG), Copenhagen.

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Ogonek, N., & Hofmann, S. (2018). Governments' Need for Digitization Skills: Understanding and Shaping Vocational Training in the Public Sector. International Journal of Public Administration in the Digital Age, 5(4), 61–75.

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Service Science at the European Research Center for Information Systems

▶ SERVICE SCIENCE COMPETENCE CENTER

The Service Science Competence Center is ERCIS' primary unit for conducting research and industry projects in the area of service management and service engineering. The team currently consists of two professors and 14 research assistants.

The proliferation of the Service Economy has changed the way in which the creation of value is perceived throughout various industry sectors and societies. Selling products is increasingly replaced by customized service offerings and alternative revenue streams (e.g., power by-the-hour). Research in the academic discipline of Service Science, Management and Engineering is focused on understanding and facilitating the creation of value in service systems, involving interactions of service providers and service customers.

The mission of the ERCIS Service Science Competence Center is twofold. On the one hand, we strive to understand the nature and impact of service orientation on commercial businesses, the public sector, and society in general. On the other hand, we contribute to further shaping the course of the service economy by designing new business solutions and software artifacts.

Our research is equally dedicated to research excellence and to providing results that companies can utilize to further shape their businesses in the service society. We achieve this goal based on a network of excellent researchers in the ERCIS network.

Service Science at the European Research Center for Information Systems

SELECTED RESEARCH PROJECTS

AutoCoP

AutoCoP (Automated Content-Providing) aims to take advantage of condition data collected from production machinery to innovate the ways in which their technical documentation is organized. AutoCoP is able to indicate anomalous behavior based on sensor data, it can identify patterns within the data and context information, and it can link to relevant pieces of the technical documentation. Thus, clear instructions for complex cases of machines can be formulated and pave the way for operator-based diagnoses and corrections on different levels of experience and qualification. The Bavarian State Ministry of Economic Affairs and Media, Energy, and Technology funds the project. The competence center member FAU Erlangen-Nuremberg, Chair for Digital Industrial Service Systems (Prof. Dr. Martin Matzner), conducts AutoCoP.

More information:
<https://autocop.info/>

Digivation

Digitalization is today's major driver for growth and innovation, radically changing value chains and relations. Designing innovative and smart services is challenging for economy and society. The project DIGIVATION aims to develop methods based on the close link of digital process innovations and service engineering as well as groundbreaking concepts of customer integration and individualization. DIGIVATION is a meta project of the funding initiative "Service Innovation Through Digitization" that fosters the interaction and exchange between 22 research projects. Project part-

ners are Paderborn University, Passau University, FIR at RWTH Aachen, Siegen University, and itb Institute for Technology of Operations Management. The time frame for the project is December 1st, 2016 to November 30th, 2019.

More information:
www.digivation.de

DIN-Connect

Data-based services and digital service systems provide new business opportunities in the industrial and service sector. Resources such as process and operational data can be applied to design services more effective and efficient. Since the 1990s, several process models for service engineering have been published. However, the increasing digitalization leaves deficits in the application of these traditional methods. In the DIN SPEC 33453 project, a more applicable and agile process for Smart Service Systems Engineering is developed and standardized. This joint project is managed by the Industry 4.0 Maturity Center GmbH, Paderborn University, University of Passau, and the FIR at RWTH Aachen. The DIN SPEC 33453 for "Smart Service Systems Engineering" will be finished by the end of December 2018 with other experts in service engineering from research institutions and companies. The project is funded by DIN-Connect.

More information:
<https://www.din.de/de/ueber-normen-und-standards/din-spec/alle-geschaeftsplaene/wdc-beuth:din21:285703329>

ACADEMIC ACTIVITIES

DIGIVATION Conference in Aachen

As part of the research project DIGIVATION, the second conference on service innovation through digitalization took place from March, 20th – 21st 2018 at the FIR e.V. at RWTH Aachen. More than 100 participants from research and economy participated at the conference to discuss current topics of service innovation. Besides three parallel Ph.D. seminars, presentations about smart buildings and augmented reality as a driver

for new services, a guided tour through the 4.0 demonstration factory, and workshops on "design thinking", "smart service canvas", and "business ecosystem design" were offered.

More information:
www.digivation.de

Announcement: Service System Innovation Conference 2019

How is digitalization transforming services? Which opportunities emerge from the digitalization of service for research, the economy, and the general public? These and other questions will be discussed on April, 8th – 9th 2019 at the conference "Service Systems Innovation—Innovation for Future Services!" in Paderborn. Gain insights into current research results of projects funded by the Federal Ministry of Education and Research in various areas of service research. The event offers renowned keynote presentations from start-ups companies and large businesses, interactive sessions, intersectoral expert rounds, interactive exhibition, and information about cutting-edge research on service science.

More information:
www.digivation.de/ssi

Personal Changes

Martin Matzner has been appointed as chairman for the young academics by the section "Information Systems" (Wirtschaftsinformatik, WKWI) of the German Association for Business Research (VHB).

Editorial jobs

Daniel Beverungen is Associate Editor of Business & Information Systems Engineering (BISE), is Guest Editor for the Information Systems Journal (ISJ) Special Issue on Service Science, and was Track Chair for Information Systems at the VHB Conference 2018 (VHB-Jahrestagung).

Martin Matzner is one of the Editors of the Journal of Service Management Research.

Daniel Beverungen and Martin Matzner, together with Christian Janiesch, served as Track Chairs for Cyber-Physical Systems and Digital Value Networks at the Multi-konferenz Wirtschaftsinformatik 2018.

SELECTED PUBLICATIONS

Berendes, C. I., Bartelheimer, C., Betzing, J. H., & Beverungen, D. (2018). Data-driven Customer Journey Mapping in Local High Streets: A Domain-specific Modeling Language. In: Proceedings of the 39th International Conference on Information Systems, San Francisco, USA.

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Bartelheimer, C., Betzing, J. H., Berendes, I., & Beverungen, D. (2018). Designing Multi-sided Community Platforms for Local High Street Retail. In Proceedings of the 26th European Conference on Information Systems, Portsmouth, UK.

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Matzner, M., Plenter, F., Chasin, F., Betzing, J. H., & von Hoffen, M. (2018). New Service Development Through Action Design Research in Joint Research Projects. In Proceedings of the 26th European Conference on Information Systems, Portsmouth, UK.

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Please contact us for more information on our projects or for starting exciting new initiatives in service science.



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SMARTER WORK

The Competence Center for Smarter Work studies new ways of working, virtual modes of organizing and organizational transformation based on communication and collaboration technologies.

It provides research and transformation support in the area of Unified Communication & Collaboration (UCC) and Social Media, which facilitate extended and richer modes of interaction among stakeholders. Customer as well as partner relations can be actively transformed by the introduction of UCC and Social Media. Furthermore, tools can be used to improve cooperation among employees, to strengthen social relations or to identify experts and specific information. The integration of these technologies and related concepts into the workplace provides profound challenges and opportunities for organizational development and innovation. We engage in detailed multi method workplace studies in order to gain deep insights into existing work practices. Based on the information and communication patterns and the relationship network of different stakeholders, we suggest scenarios for new work practices and transformation paths. In our scenarios for smarter work we also reflect issues of corporate social responsibilities and employee wellbeing.

Leadership in Online Communities
(PI Dr. S. Vidolov)



Online communities, such as Open Source Software (OSS) communities, have become pervasive new forms of organising work processes. Such communities are oftentimes comprised of volunteers with very diverse skills and levels of contribution and involvement. Organising and managing such communities is not following the established institutional or market principles. It is instead often reported that such communities are sustained by a number of important individuals, oftentimes referred as leaders, who train, motivate and facilitate the work of community participants, and in this way their role is central to the success and existence of these communities.

Our team embarked on a project examining the developers' community of Drupal, which is an OSS community. Our objective was to gain rich insights into the leadership practices and styles that exist in this community. Our approach was ethnographic, involving collecting data from multiple sources about four community leads, who were also responsible for mentoring new participants. More specifically, we crawled data of their interactions in the developers' forum, and conducted observations in real time in other communication channels. Our analysis comprised of both quantitative and qualitative techniques that aimed to triangulate our findings. More specifically, we conducted Social Network Analysis across seven different network indicators and also an inductive discourse analysis of the leads' interactions. The comparison of the data across these four leads rendered the following findings:

- We were able to synthesize four distinct leadership styles – these are participative, empowering, directive and emphatic. These styles offered a structured understanding of the diverse range of leadership practices and approaches.

These insights can also inform understanding of leadership in other contexts.

- Our methodological approach contributed to developing a novel framework for exploring leadership that comprises of both qualitative and quantitative in-depth techniques, based on real-life interactions in online communities.

Examining Modes of Communication and Collaboration (PI S. Lansmann)



Examining and understanding existing communication and collaboration practices is seen as a key step towards adopting new Information and Communication Technologies (ICT). In a project with Armacell, the world leader for engineered foams, headquartered in Luxembourg, provided the opportunity for an in-depth exploration combining interviews and observations at different organizational divisions and levels. In particular, we aimed to understand and compare the communication practices across geographical areas and functional divisions. We focused our investigation on the Customer Service Centre located in the European headquarter Münster and another group responsible for the EMEA region. In sum:

- We examined the socio-technical infrastructure of the company, and the institutionalized modes of communication.
- We identified new collaborative platforms that could afford new and more efficient ways of communication and collaboration.
- We offered insights into the future integration and use of a new collaborative tool, including the potential accompanying risks and challenges.

Workplace Analytics (PIs S. Lansmann, J. Mattern, S. Schellhammer, J. Hüllmann)



IT service providers have used the proliferation of cloud infrastructures to complement their offerings of workplace tools with analytics, i.e. the systematic monitoring and analysis of communication and collaboration tool use. Our research in collaboration with a group of MSc IS students explores established metrics, the underlying assumptions and their application as diagnostic tools for team performance and individual work practices, time use and collaboration. Specifically, we focus on the Office 365 platform.

Based on the broader discourse about Social Physics, Digital Taylorism, Quantified-Self and Performing Work, the students work towards the development or adaptation of digital workplace KPIs in the context of Opinion Leadership, Formal and Informal Networks, Adoption and Diffusion, Social Capital, Media Repertoire, Unsustainable Work Practices, Communicative Load, Unproductive Work Practices and Employee Engagement.

ONGOING RESEARCH INITIATIVES

- Organizational implications of the transformation of individual and corporate communication media repertoires
- Identification and Visualisation of Group Metrics in Enterprise Social Networks
- Enterprise Social Networks and the dialectics of collaborative advantage and collaborative overload
- Sustainable high performance work: physiological indicators and psychological mechanisms

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SOCIAL MEDIA ANALYTICS

The Competence Center Social Media Analytics (CC SMA) emerged from the BMBF-funded project PropStop (www.propstop.de) in August 2018. The CC comprises partners of the PropStop consortium and additional ERCIS partners as well as practitioners. The initial idea of Propstop (addressing the detection of automatically generated propaganda in online media) has become a major issue in societal and scientific discussion. This CC aims at reaching beyond the boundaries of PropStop and establishes a community of researchers and practitioners to address the topics of Disinformation, Propaganda, and Manipulation via Online Media in a multi-disciplinary approach.

Nowadays, the internet and specifically social media is one of the most important infrastructures for interaction on and discussion of societal, political, or private topics. Beyond free and public expression of opinions, social media also provide options for large-scaled concerted manipulations. Semi- to full automatized systems (often called “social bots”) are able to act on behalf of humans by using technical access routes (APIs or remote-controlled web browsers) to social media infrastructure in order to massively disseminate content (spam, hate, opinions, or mere advertisement). Such attacks can result in a distorted image of the digital public opinion and may influence the single user, societal debates, news coverage, or commercial success of products and companies. In the end, this can cause severe societal and / or monetary damage.

Research in the SMA CC considers the area from multi-disciplinary, i.e., technical, analytical, societal, journalistic, and practitioners’ points of view. Moreover, the CC strongly supports the joint European initiative CLAIRE, i.e. the Confederation of Laboratories for Artificial Intelligence Research in Europe. We bring all expertise of our partners together in order to



- investigate the nature of propaganda and manipulation characteristics in online media;
- develop or advance detection techniques for manipulation, disinformation, and propaganda;
- assess the societal and economic implications of the latter;
- suggest countermeasures to ensure transparency and fair participation in social media.

PARTNERS

The partners of the CC SMA tackle the challenges of propaganda and manipulation in social media from multiple scientific and practical perspectives. While some partners emerge from the project PropStop, LIACS complements the analytics expertise of the CC by providing advanced means of network and graph analytics. At the same time, the University of Adelaide contributes a wider international perspective to the general topic of manipulation in online media and opens perspectives for research on transferability and generalization of methods. As a central commercial partner, Arvato CRM Solutions provides insights into the practical management and analysis of social media content and provides an important link to the ERCIS OmniChannel-Lab powered by Arvato.

- University of Münster, Information Systems and Communication Science
- University of Braunschweig, IT Security
- Hochschule für Angewandte Wissenschaften Hamburg (HAW), Digital Media Research

- University Duisburg/Essen, Social Media, Professional Communication in Electronic Media / Social Media
- University of Leiden (LIACS), The Netherlands
- University of Adelaide, Australia
- Karsten Kraume (Arvato CRM Solutions)
- ERCIS OmniChannelLab powered by Arvato
- Pallas GmbH, IT-Security, Brühl, Germany

PUBLICATIONS

As result of scientific cooperation during 2017 and 2018, the members of the competence center published several highly visible articles and working papers.

Frischlich, L., Boberg, S., & Quandt, T. (2017). Unmenschlicher Hass: Die Rolle von Empfehlungsalgorithmen und Social Bots für die Verbreitung von Cyberhate. In K. Kaspar, L. Gräßer, & A. Riffi (Eds.), *Schriftenreihe zur digitalen Gesellschaft NRW: Vol. 4. Online Hate Speech. Perspektiven auf eine neue Form des Hasses* (pp. 71–80). Munich: kopaed.

Grimme, C., Assenmacher, D., Adam, L., Preuss, M., Lütke Stockdiek, J.F.H. (2017). Bundestagswahl 2017: Social-Media-Angriff auf das #kanzlerduell? Report 2017.1, Project PropStop: 1-9

Grimme, C., Preuss, M., Adam, L. & Trautmann, H. (2017). Social Bots: Human-Like by Means of Human Control? *Big Data*, 5 (4): 279-293



Boberg, S., Schatto-Eckrott, T., & Frischlich, L. (2018). “Fabricated News: Der Einfluss von Fake News Auf Die Politische Einstellung.” *Wissenschaft & Frieden* 1. <http://wissenschaft-und-frieden.de/seite.php?artikelID=2264>.

Carnein, M., & Trautmann, H. (2018). Optimizing Data Stream Representation: An Extensive Survey on Stream Clustering Algorithms. *Business and Information Systems Engineering (BISE)*, 2018. (Accepted)

Carnein, M., & Trautmann, H. (2018). evoStream — Evolutionary Stream Clustering Utilizing Idle Times. *Big Data Research*, 12.

Frischlich, L. (2018). “Fake News und Social Bots: Erkennung, Wirkung, Bekämpfung.” In: B. Holznagel & W. Steul: *Öffentlich-Rechtlicher Rundfunk in Zeiten des Populismus*, Berlin, Germany. 27–60.

Frischlich, L., Boberg, S., Schatto-Eckrott, T., Wintterlin, F. & Quandt, T. (2018). “False Information—real Problems? Online-Misinformation, Political Anger, Inefficiency, Trust and the Intention to Vote Populists.” In 68th Annual Meeting of the International Communication Association (ICA). Prague, Czech.

Frischlich, L. & Grimme, C. (2018). Manipulation im Netz: (Medien-) Pädagogik zwischen Fake Accounts, Social Bots, und Propaganda. Handout for educators created during a workshop at the Medienkompass NRW 2018.

Grimme, C., Assenmacher, D., & Adam, L. (2018). Changing Perspectives: Is it Sufficient to Detect Social Bots? In *Proceedings of the International Conference on Human-Computer Interaction*, Las Vegas, USA.

Quandt, T., Boberg, S., Schatto-Eckrott, T., & Frischlich, L. (in press). Fake News. In: Vos, T.P. & Hanisch, F. (Eds.) *The International Encyclopedia of Journalism Studies*. Wiley, Blackwell.

MEDIA (SELECTION)

Media featuring members of the group covered the topic of the CC SMA. The following provides a selection of this media coverage:

- Helmholtz Perspektiven, Bots and elections? (C. Grimme), August 2017
- ZDF, Frontal21, Election Campaigns during the German federal election (M.Preuss, T.Quandt), October 2017
- ARD, reportMÜNCHEN, Trolls and Social Bots during the German federal election (C. Grimme), January 2018
- Tages-Anzeiger, Interview on Social Networks (T. Quandt), September 2018
- SWR2 Feature on Fake Follower (C. Grimme), October 2018

ACTIVITIES

- Workshop on Online Propaganda and Social Bots at the Medienkompass NRW, March 2018
- Participation in and talk at the Omni-Channel Lab Annual Strategy Summit, Rothenberge, June 2018
- High-Level Conference on Election Interference in the Digital Age – Building Resilience to Cyber-Enabled Threats, Brussels, October 15-16, 2018

UPCOMING EVENTS

The CC SMA and PropStop are organizing the Multidisciplinary International Symposium on Disinformation in Open Online Media (MISDOOM) during 27.02.–01.03.2019 in Hamburg, Germany. This will be a scientific meeting relevant to researchers from computer and social science as well as to practitioners related to media, journalism, and infrastructure.



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EQUAL-IST Project Meeting in Muenster (Germany) 22-23 March 2018



GENDER EQUALITY IN INFORMATION SCIENCES AND TECHNOLOGY RESEARCH INSTITUTIONS WITH THE EQUAL-IST PROJECT

EQUAL-IST (“Gender Equality Plans for Information Sciences and Technology Research Institutions”) is an international project funded by the EU (European Union) Horizon 2020 Framework Programme. The project goal is to introduce structural changes at the participating Information Sciences and Technology (IST) research institutions to enhance gender equality, diversity, and work-family balance.

The project combines gender mainstreaming and positive actions at four main levels:

1. HR and management practices
2. Institutional communication
3. Teaching and services for (potential) students
4. Research design and delivery

The project consortium is formed by such ERCIS member institutions as the University of Münster (Münster, Germany), the University of Turku (Turku, Finland), Kaunas University of Technology (Kaunas, Lithuania), the University of Minho (Guimarães, Portugal), and Simon Kuznets Kharkiv National University of Economics (Kharkiv, Ukraine). Two further research institutions include Ca’ Foscari University of Venice (Venice, Italy) and the University of Modena and Reggio Emilia (Modena, Italy). The project is coordinated by the ViLabs company (Thessaloniki, Greece).

The project started in June 2016, successfully passed the mid-term review meeting in November 2017, and will last until May 2019.

To date, the following activities have been performed within the project:

First, best practices were collected in order to inform the further course of action. For that, the analysis of related projects aimed at the promotion of gender equality in research institutions was performed.

Second, internal gender audits were conducted at the participating research institutions. The objectives here were to reveal (1) the specific challenges related to gender equality, diversity, and work-family

balance that each institution faced, as well as (2) the promising initiatives to address each of the identified challenges.

Third, a co-design of tailored Gender Equality Plans (GEPs) for each participating research institution was performed. This process was facilitated by the Crowd-Equality idea crowdsourcing platform (www.crowdequality.eu). The platform was developed by the team of eight Bachelor students studying Information Systems at the University of Münster as part of their project seminar. The designed GEPs were then approved by decision-makers at each research institution and contained the detailed action plan for each of the selected initiatives aimed at addressing the identified challenges.

Finally, the designed GEPs are currently being implemented. The implementation is divided into two iterations, where at the end of the first iteration the GEPs were refined. The GEP refinement was based on the results of internal and external evaluation, which continuously takes place.

For further information please visit www.equal-ist.eu

WORKSHOP “DIGITAL TRANSFORMATION OF SMALL AND MEDIUM ENTERPRISES”

The workshop took place on June 7-8, 2018 at the Computer Graphics Center of the University of Minho (Guimarães). It was co-organized by Isabel Ramos and Klaus North from Wiesbaden Business School, Germany. The main objective of the workshop was to join ERCIS members with other European colleagues to discuss opportunities for collaborative research addressing the digital transformation of SMEs. 15 HE participants (Technical University Graz in Austria, University of Turku in Finland, University of Münster and Wiesbaden Business School in Germany, National University of Ireland, Tuscia University in Italy, University of Agder in Norway, University of Minho and University Portucalense in Portugal, University of Maribor in Slovenia, Deusto Business School in Spain, University of Skövde in Sweden) and two of the Industry in Portugal (CompetInov and COTEC Portugal) arrived at two main ideas for future collaborative projects: Awareness Training for Supply Chain Risks in SME and Co-Creative Networks – Accelerating Digitalization Processes In SMES. These ideas are being developed into papers that can point to knowledge gaps to be filled by collaborative projects.



DT Workshop

COST PROPOSAL – OPEN INNOVATION EXCELLENCE NETWORK

Several members of the ERCIS network participated in the development of a COST proposal – Open innovation Excellence Network, which was submitted in May and we are still waiting for the results of its evaluation. The proposed action aims to advance the understanding of the OI antecedents, hampering factors, and of the challenges present in innovation ecosystems. The action is structured along three pillars that describe as many levels of

analysis of the OI initiatives: intra-organizational; organizational; inter-organizational. The COST Action was proposed by 71 institutions of 32 countries. The ERCIS partners involved in this collective effort are: University of Minho, Tallinn University of Technology, National University of Ireland Galway, Kaunas University of Technology, University of Agder and University of Maribor.



Conference on Gender

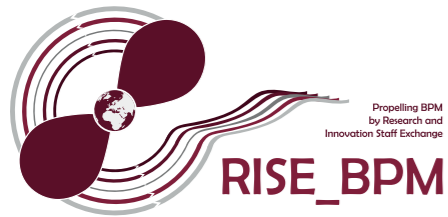
FIRST INTERNATIONAL CONFERENCE ON GENDER EQUALITY AND TECHNOLOGY

On June 8, 2018, the first event open to the international participation of academics and other experts in the field was held at the Computer Graphics Center of the University of Minho (Guimarães) to discuss gender equality in the digital economy. This event was attended by several academic experts from various universities in Portugal as well as participants from trade unions and companies. In the morning, the event opened with the participation of the Secretary of State for Citizenship and Equality and in the afternoon we had the presence of the Chair of the Commission for Citizenship and Gender Equality. This event was of great importance for the dissemination of the EQUAL-IST project and the efforts being developed at the University of Minho.

INVITATION FOR PROJECT COLLABORATION WITH THE PARTNERS OF THE ERCIS NETWORK – “EXPLORING THE CONTRIBUTION OF CROSS-FUNCTIONAL TEAMS INTO EXPERIENCE CAPABILITY”

This research project tempts to develop and validate a multi-dimensional scale for measuring experience capability. The first results suggest that six dimensions reflect the experience capability construct. Cross-functional work, defined as the ability of multiple departments to collaborate and coordinate their activities emerge as one of the six dimensions. Whilst this study recognises the importance of cross-functional work, it falls short of exploring how collaboration (i.e. information-sharing) and cooperation (i.e. undertaking coordinated work activity) are enacted in practice and what determines a firm’s ability to successfully implement cross-functional teams. The invitation to join this project is open for scholars from multiple disciplines (e.g. operations, IT, HR, marketing...) to explore this topic from multiple lenses. If this has raised your interest, please get in touch!

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PROPELLING BUSINESS PROCESS MANAGEMENT BY RESEARCH AND INNOVATION STAFF EXCHANGE (RISE_BPM)

Since the year 2015 RISE_BPM is an ongoing project and the first favourably evaluated proposal within the Horizon 2020 EU funding programme, submitted by the University of Münster as coordinator in cooperation with ERCIS partners. It belongs to the specific funding program: Marie Skłodowska-Curie Actions: Research and Innovation Staff Exchange, which targets supporting individual researcher's research efforts. The project is aimed at networking world-leading research institutions and corporate innovators to develop new horizons for Business Process Management (BPM). The project consortium, besides the University of Münster as coordinator, includes academic partners from Australia (QUT), South Korea (UNIST), Brazil (UNIRIO), Austria (WU), Spain (USE), the Netherlands (TU/e), and Liechtenstein (UNI-LI) as well as practice partners from the Netherlands (CUPENYA) and Germany (PICTURE).

Four new partners joined the project consortium in 2018: University of Melbourne (UNIMELB), Pohang University of Science and Technology (POSTECH), University of Paderborn (UPB) and the University of Erlangen-Nuremberg (FAU). In September 2018, the consortium met at UPB in Paderborn for the yearly consortium meeting to discuss the current project status and possible strategies to sustain the joint efforts, once the funding is over (04/2019).



Verena Wolf in Liechtenstein

Verena Wolf from Paderborn, who went to Vaduz:

I enjoyed the opportunity to stay at the Institute of Information Systems at the University of Liechtenstein from July to September 2018. The secondment was enabled by the RISE_BPM project, which Paderborn University joined in May 2018. During my stay, we analyzed how workarounds in organizational routines can be leveraged to create digital innovation. We developed a framework that depicts the reasons for the creation of workarounds and how those spread as unofficial routines between employees in organizations. The collaboration continues by collecting more interview data at both institutions. Furthermore, the international research atmosphere and expertise of the experienced researchers in Liechtenstein helped me to improve the quality of my research and expanded my research perspective.

In addition to my research, I had the pleasure to meet great people that made me feel very welcome. I made new friends from all over the world, which was awesome. Further, it was amazing to meet people from my old home region far away, which I had not expected.

Liechtenstein is a beautiful country that offers excellent opportunities for hiking, climbing, and many more. Being surrounded by nature helps to break free from everyday work routines and reset your mindset. The hike to the "Schesaplana" became my favorite because of the astonishing view on Liechtenstein, Switzerland, and Austria.

All in all, my stay abroad with RISE_BPM was a great experience that I highly recommend to every researcher. My secondment helped me to strengthen my research skills and get new ideas for my future research.



Hendrik Scholta in Rio

Hendrik Scholta from Münster who went to Rio de Janeiro:

From July to September, the RISE_BPM project brought me to the Universidade Federal do Estado do Rio de Janeiro (UNIRIO) for a stay of two months. It was great to continue a scientific project with people from a different topical background and experience a completely different culture.

The aim of the stay was to develop further a similarity metric for process model activities in the course of a project that the colleagues at UNIRIO currently run. Previously, I designed a first version of the metric that calculates the similarity between two activities. The colleagues from UNIRIO contributed their expertise on process model matching, machine learning and data mining, which made the discussions fruitful and improved the metric. We started to implement it in a software prototype to evaluate it further in future work.

And also apart from research, Brazil and especially Rio de Janeiro have a lot of magnificent things to offer: The sugarloaf, the Cristo Redentor statue, Samba, the Maracanã, Pedra da Gávea and many more. Together with colleagues from Rio and other RISE_BPM universities, I did amazing trips. In any case, it was a pleasure to get to know the overwhelming hospitality of the Brazilian people—I would really love to come back. It was a sensational and unforgettable time in Rio!



Dina Bayomie in Melbourne

Dina Bayomie from WU Vienna Austria, who went to Melbourne:

I was a visiting researcher at the University of Melbourne, Australia, from 15 September to 16 October 2018. It was my first secondment and my first time in Australia. It is hard to put this astonishing experience into words.

During my visit, I had deep discussions about my research topic "Event Correlation" with Professor Marcello La Rosa and his team. We explored the different algorithms and techniques that can be used for the correlation. We developed a new technique for correlating the event log from the distributed systems. We had useful discussions about what are the other data and perspectives, we can consider for the correlation rules to improve correlating the events.

Participating in RISE_BPM has been a great impact on both my research and personal experience. Besides my research, on the weekends, I had the opportunity to explore the beauty of Melbourne city and its culture. Also, it helps me in building my network within the BPM community.

VISITS AT STEVENS INSTITUTE OF TECHNOLOGY AND COPENHAGEN BUSINESS SCHOOL

On May 14th, a workshop was held with representatives of WWU Munster and University of Twente on collaboration in data science research and education. Thorsten Wiesel, Gottfried Vossen en Heike Treutmann of WWU participated. Michel Ehrenhard, Fons Wijnhoven, Jos van Hillegersberg en Maria Iacob took part in the event

University of Twente (Fons Wijnhoven) took part in the set-up of the ERCIS Digital Transformation Competence Center. The center aims at encouraging research and providing expertise on the digital transformation of SMEs. Our research work in the field of information systems (IS) focuses on both practical and theoretical problems of adopting digital technologies to transform the business and leverage the opportunities stemming from the impact of those technology across society.

Jos van Hillegersberg visited ERCIS partner Copenhagen Business School and took part in the PhD defense committee of Szymon Furtaks. The thesis is entitled: Sensing the Future: Designing Sensor-Based Predictive Information Systems for Forecasting Spare Part Demand for Diesel Engines and was supervised by Professors Rasmus Pedersen and Michel Avital. Friday 21st September Jos van Hillegersberg visited ERCIS partner Copenhagen Business School and gave a talk on Design and Governance of Inter-Organizational Systems in the Internet of Things Era in the CBS renowned scholars seminar series

Ongoing collaboration and visits of Dr. Jonas Hedman of Copenhagen Business School resulted in a joint publication on Sports Analytics that was presented at ICIS 2017 in Seoul, Korea. Follow-up activities in this area are planned for 2018-2019.

VISITING PROFESSOR FROM WWU AT WUST



WUST Visiting

In the context of the Visiting Professors Programme, Prof. Jörg Becker from the University of Muenster (WWU) was invited to hold the lectures at the Wroclaw University of Science and Technology (WUST) and Wroclaw University of Economics. During his stay in Wroclaw from 18-22 June 2018, he gave a series of lectures on “Retail Information Systems – A Framework”, “Management Information Systems Reloaded”, “E-Government – Think Digitization to its End”, “Business Informatics – The Best of two Worlds” and “Reference Modeling”.

JOINT JOURNAL PUBLICATION BY LEIDEN UNIVERSITY AND WWU MÜNSTER

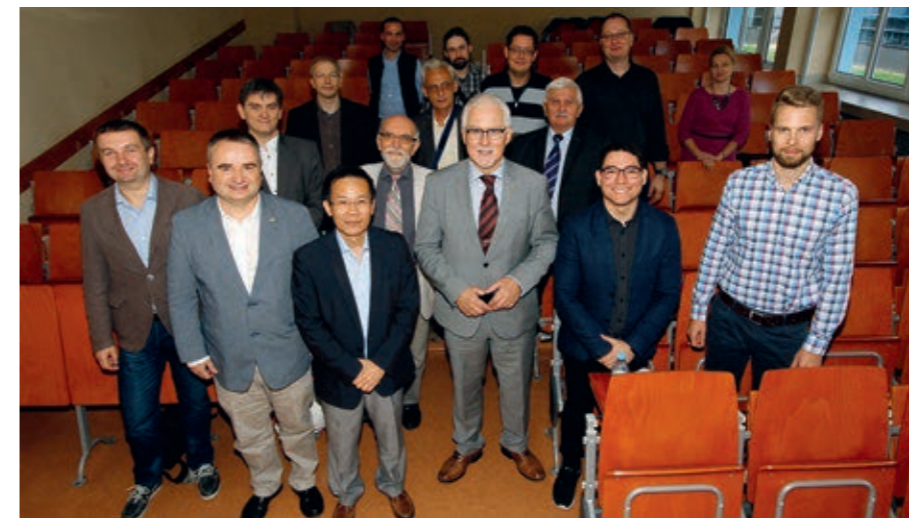
The research collaboration of Leiden University and WWU Münster on the topic of multimodal multiobjective optimization led to a new journal paper. Moreover, new insights on how to find extremal points in multiobjective optimization were summarized in a conference contribution to the LeGO 2018 – Global Optimization Workshop, which will be published in the post-proceedings of the event.

Kerschke, P., Wang, H., Preuss, M., Grimme, C., Deutz, A. H., Trautmann, H., & Emmerich, M. T. M. (2018). Search Dynamics on Multimodal Multi-Objective Problems. Evolutionary computation, 1–30.

ERASMUS+ PROJECT: “ONLINE LEARNING MODULES FOR BUSINESS PROCESS MANAGEMENT – BPM ONLINE”

The Hilti Chair of Business Process Management of the University of Liechtenstein is leading a European-wide project on further education in Business Process Management. The project is sponsored by the EU’s Erasmus+ program. The project aims at collaborating with partners from four countries to develop a reference curriculum for an executive BPM online course. The Hilti Chair is acting as the applicant and leading project partner. Also involved are the Copenhagen Business School in Denmark, Münster University in Germany, the Vrije Universiteit Amsterdam in the Netherlands, and the Vienna University of Economics and Business in Austria.

JOINT PROJECT BY WUST AND WWU



WUST Joint projec

We rephrase Turing’s dictum in the following question. Can recommendation systems think? Answers to this question will have strong implications for the more general issue of whether and how far modern systems mirror our thinking. This assumption was the beginning of the Polish-German research project on “Deep Recommendation based on Collective Knowledge” by the DBIS Group of the University of Münster (WWU) and the Department of Information Systems at the Wroclaw University of Science and Technology (WUST). The project has been accepted for implementation as part of the cooperation program between the Ministry of Science and Higher Education and the German Academic Exchange Office (DAAD). The aim of the project is to activate the exchange of scientists between WWU and WUST in 2018-2019. Particularly, the partners address the following research topics:

- **Topic 1.** An Effective Collaborative Filtering Based Method for Social Collective Recommendation. Collaborative filtering approach is one of the most widely used in recommendation processes.

- **Topic 2.** A method for web-based user interface recommendation using collective knowledge and multi-attribute structures. This research involves an approach to the problem of web-based user interface personalization and recommendation using collective knowledge (coming from collection of existing users) and multi-attribute and multi-value structures.

- **Topic 3.** Collective knowledge state during integration. Integration and further recommendation of collective knowledge becomes a more and more common task, but research rarely focuses on how it is influenced by the time dimension. In this topic, we describe expanding conflict profile – a method to model the changes in collective knowledge consensus when the group is slowly adding new members with new opinions.

Three invited lectures were delivered by Prof. Gottfried Vossen, Leschek Homann and Denis Martins from the University of Münster in February and September 2018. In return, four scientists from WUST visited Germany in April 2018. Further work planned for 2019 includes staff members exchange to work on a journal publication.

ERASMUS+ PROJECT: TEXT MINING FOR CURRICULUM DESIGN FOR MULTIPLE INFORMATION SYSTEMS DISCIPLINES



Initiated by the University of Liechtenstein, the network was again successful in winning an Erasmus+ project called “Text Mining for Curriculum Design for Multiple Information Systems Disciplines”. Aside from the University of Liechtenstein, the consortium consists of the National University of Ireland Galway, and the University of Münster.

The goals of the project are to derive a novel semi-automatic, data driven curriculum design process (supported by software), and to develop two reference curricula, one in the domain of Data Science, and one in the area of Business Process Management. The data for the domains will be collected from online job ads, professional career platforms, and platforms like *eduglopedia.org*.

The project will last for two years and started in October 2017.



ERASMUS+ PROJECT MASTIS



Piloting of the MASTIS courses in Vinnytsia National Technical University

The cross-regional project “Establishing modern master-level studies in Information Systems (MASTIS)” reviews and improves a Master’s program in line with market needs especially tailored for the Ukraine and Montenegro. It is funded by the ERASMUS+ programme of the European Union and has a duration of 36 months.

Since 2016, several ERCIS partner institutions together with universities from the Ukraine and Montenegro work on the development of an Information Systems Master’s program that not only considers the relevant content but also innovative teaching methods and technologies. In 2018, we had three project meetings in Kristiansand (Norway), Podgorica (Montenegro) and Kharkiv (Ukraine), where we discussed the pilot teaching of the developed course contents, monitoring of the MASTIS project and master thesis defences that graduates will need to pass as part of the program.

ERASMUS+ PROJECT ON VIRTUAL REALITY IN HIGHER EDUCATION



In October 2018, the University of Liechtenstein, the University of Duisburg-Essen, and the University of Agder have kicked-off their Erasmus+ project on Virtual Reality in Higher Education: Application Scenarios and Recommendations. The initial meeting was hosted by University of Agder in Kristiansand. The project aims at providing recommendations for the use of VR in university education. Educators will receive decision support for choosing VR practices appropriate for their courses. The project also seeks to support intercultural exchange by enabling better cooperation through means of virtualisation. During the kick-off, the first steps have been planned; the results from theoretic work will lead to two workshops to be hosted in Liechtenstein and Germany in 2019.

Three more workshops will follow in 2019. The project is supported by the ERCIS headquarters and will use the ERCIS network to conduct a survey among interested educators. The project leads are Stefan Stieglitz from Duisburg-Essen, Isabell Wohlgenannt from Liechtenstein, and Tim Majchrzak from University of Agder.

JOINT ERCIS PAPER AT EGOV – CEDEM CONFERENCE

Based on a meeting at University of Agder in August 2018, four ERCIS members (Sara Hofmann, University of Bremen, Stefano Za and Alessio Braccini from LUISS, and Øystein Sæbø from University of Agder) presented a paper on Sharing Economy at the EGOV-CeDem conference (which was nominated as a candidate for the best conference paper). The collaboration continues, with several papers being under review and planned also in the near future. Several members from the ERCIS network has been visiting UiA this year, while Øystein Sæbø from UiA visited LUISS for two months this fall.

PROJECT COLLABORATION OF KEDGE BUSINESS SCHOOL AND ST GALLEN UNIVERSITY

Companies’ upstream supply chain beyond direct suppliers is receiving increasing attention from investors and customers, tightening regulation from governments, and growing interest from civil society. Buying companies’ attention increases further upstream in their supply chain when critical material is being changed or limited without prior notice, quality becomes volatile, or prices fluctuate in unanticipated ways. In their attempts to extend their monitoring and control further upstream in their supply chain, many companies have come to realize the complexities and power issues that arise. That is, there are difficulties that arise when there is a lack of direct contractual relationships with suppliers of their suppliers. Also, companies are bound by their limited expertise in managing beyond direct suppliers. The challenges begin with ignorance about sectors, regions, or companies in which they lack familiarity, which frequently occurs when they seek to manage deeply into their upstream supply chain. This paper provides an overview of company challenges originating upstream in their supply chains beyond their first tier. It outlines current practices to influence organizations beyond direct suppliers, and gives recommendations on how to manage the supply chain upstream. This project is meant to provide practitioners further insights into business practice for more effectively and actively monitoring and influencing sub-suppliers.

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Start of Pioneers second cohort in Leuven

PIONEER’S SECOND COHORT HAS JUST STARTED

Since 2017, the University of Tallinn has been jointly offering with KU Leuven (the coordinator) and the University of Münster the innovative 120 ECTS joint master programme Erasmus Mundus Master of Science in Public Sector Innovation and e-Governance (PIONEER). The general idea behind this master programme is that the public sector needs interdisciplinary expertise in order to be able to fully benefit from the potential of ICT and technological innovations. The program prepares experts with knowledge of both Public Administration and ICT and who, taking into account the context-specific factors, can implement a variety of technological solutions for the information society, public services and improving the efficiency of Public Administration. Graduates should be able to see the opportunities and threats of different public sector innovations as well as the essence of e-governance. The programme has received funding from the European Commission and lasts from 1 September 2017 until 31 August 2019.

After having passed their first semester in Leuven and the summer term in Münster, the first cohort (16 students from 14 countries) is already approaching the finishing straight by passing their third semester in Tallinn and after that directly onwards to writing their Master Thesis at a university in one of the three countries or within a company context. While this is still ongoing, the next, even bigger cohort of 25 students from 18 different countries has just started in Leuven.

HORIZON2020 PROJECT TROPICO

The Ragnar Nurkse Department of Innovation and Governance (RND) at the Tallinn University of Technology is a partner in Horizon2020 project “Transforming into Open, Innovative and Collaborative Governments” (TROPICO). The project has altogether 12 partners, including KU Leuven from ERCIS network. The project’s duration is June 2017 until June 2021 (48 months) and the budget allocated to RND is 245,000 Euros. The TROPICO project aims to comparatively examine how public administrations are transformed to enhance collaboration in policy design and service delivery, advancing the participation of public, private and societal actors. It will analyse collaboration in and by governments, with a special emphasis on the use of information and communication technologies (ICT), and its consequences. This multidisciplinary project will follow a truly comparative approach, examining ten countries representing the five administrative traditions in Europe: Nordic (Norway, Denmark), Central and Eastern European (Estonia, Hungary), Continental (Netherlands, Germany), Napoleonic (France, Spain; Belgium (mixed)), and Anglo-Saxon (United Kingdom).

THE ERCIS OMNI-CHANNEL LAB

The long-term partnership between the European Research Center for Information Systems (ERCIS) and Arvato CRM Solutions (Arvato), a hugely successful collaboration of research and practice, continues to grow and develop. The ERCIS Omni-Channel Lab – powered by Arvato – combines ERCIS’s established academic research network and teaching facilities with Arvato’s practical expertise of handling 1.7 million customer service interactions every day for many of the world’s best-known brands. This means that the Lab is perfectly placed to investigate innovative solutions and concepts to meet the challenges of omni-channel customer service.

The Lab’s research focuses on integrating, modelling and analysing relevant customer data from many sources and across multiple channels with the goal of improving customer relationship management (CRM) and, specifically, customer service.

RESEARCH

The Lab’s work in practice-oriented research in the area of CRM technology has led to several publications, presented at international conferences and in leading journals. In addition, research exchanges have improved the Lab’s connections with international research institutions. For example, the Lab investigated in the conceptual modelling of omni-channel environments and its use in the business-to-business (B2B) selling process. The two resulting papers were presented at the Multikonferenz Wirtschaftsinformatik (MKWI ‘18) in Lüneburg, Germany. Further research on this matter is currently under review.

The Lab also continued its research on customer segmentation. As a result, new approaches to segmenting data streams have been developed which vastly outperform existing solutions. The results have been published in the Journal of Big Data Research. Additionally, the Lab created the most exhaustive survey of stream clustering algorithms available. The survey has

been accepted for publication by the Journal of Business and Information Systems Engineering (BISE).

Furthermore, members of the Lab took part in the Business Process Management by Research and Innovation Staff Exchange (RISE_BPM) project by collaborating with researchers at the University of Rio de Janeiro, Brazil, for two months. This project was aimed at connecting the research streams of foundational ontologies with that of omni-channel management. In addition, the Lab has started a collaboration with the ERCIS Competence Center Social Media Analytics and the PropStop Project, which aims to study hidden propaganda dissemination via online media. The goal is to develop new techniques to extract, analyse and visualise topics or content from textual data. The collaboration will help the PropStop project with the analysis of propaganda, as well as analysing customer service interactions in the Lab’s context.

Additionally, the Lab’s project Deep Recommendation based on Collective Knowledge has secured support from the Deutscher Akademischer Austauschdienst (DAAD). It is a collaboration with the ERCIS partner University of Science and Technology in Wrocław, Poland. One goal of the collaboration is to investigate the impact of collective knowledge on traditional recommender systems to improve the accuracy of predictions. Part of the close collaboration includes two-way visits between the universities. The first results were presented at the International Conference on Computational Collective Intelligence (ICCCI’18) in Bristol, UK.

The Lab also participated in the Summer School on Theory Development in Ljubljana, Slovenia and the 1st Metaheuristic Summer School in Sicily, Italy. In addition, Karsten Kraume (CIO/CSO at Arvato CRM Solutions), was a speaker at the Annual ERCIS meeting in Luleå where he and Dr. Armin Stein led a session on collaboration between academia and businesses. More-

over, the Lab strongly supports the joint European initiative CLAIRE (Confederation of Laboratories for Artificial Intelligence Research in Europe) that seeks to strengthen European excellence in AI research and innovation.

APPLIED SCIENCE

The Lab’s collaboration with industry partners offers its members the opportunity to work on real-life projects from industry and solve challenges by addressing them with interdisciplinary teams. Participants from both ERCIS and Arvato worked on customer service innovations across various projects. For example, the Lab collaborated with an established Spanish retailer in the home furnishings and textiles sector. As part of this, an innovative recommender system which combines and integrates omni-channel information from sources such as weblogs, social media, purchase data and Wi-Fi logs was developed. As a result, much more information about a customer’s preference can be gathered and analysed. In addition, the Lab performed a real-life customer segmentation based on millions of transactions from the retailer and subsequently identified suitable marketing strategies. Several publications that resulted from this collaboration are currently under review.

The Lab also collaborated with solution design experts at Arvato to develop a new workshop concept for omni-channel customer journey design. New scientific findings about customer experience management were embedded in the method so that Arvato’s consultants are equipped with a toolkit for managing the complexity of omni-channel interactions. The Lab is continuously extending its network of experts. For example, external experts from partner universities and internal innovation experts from Arvato CRM attended this year’s ERCIS strategy summit in Rothenberge. The group of experts jointly defined next steps for knowledge exchange and potential collaborations with partner universities. Building on the Lab’s three work streams (processes, data, and analyt-

ics), the attending scholars and practitioners vividly discussed how to bring together theoretical and practical experiences to fuel innovation that can be implemented in the real world.

TEACHING

The Lab is closely involved in teaching and educating bachelor, master and PhD students. For this purpose, the Lab offers and supports various seminars and lectures. Some examples include:

- The project seminar Customer Service at Hilti aimed to analyse the customer service processes at manufacturer Hilti. The project team developed proposals to measure and improve performance analysis for Customer Service Representatives (CSRs) in real-time.
- Seminar – Digital Customer Journey: Eight bachelor students in Information Systems from Münster as well as eight MBA students from the University of West Georgia met at the ERCIS headquarters in Münster. Working closely with the Lab’s team, the students explored ways to encourage and facilitate organisation-wide approaches to customer-centricity. This supported the Lab’s mission of developing practice-oriented research that can be applied in today’s commercial operations.

The Lab was also involved in the seminars Infrastructure for Statistical Methods in Retail, Watchtrainer 2.0, Smart Home, Infrastructures for Data-Driven Services as well as the lectures on Management Information Systems and Data Warehousing, Data Management, Data Analytics I, Data Analytics II and Introduction to Information Systems.

Furthermore, the Lab invites students to write their Master’s or Bachelor’s thesis in the context of omni-channel customer service. In total, six theses with topics ranging from an assessment of digital labs, and the modelling of dialogues, to image recognition have been revised in this year.

PUBLICATIONS

Carnein, M., & Trautmann, H. (2018). ev-oStream – Evolutionary Stream Clustering Utilizing Idle Times. Big Data Research.

Carnein, M., & Trautmann, H. (2018). Optimizing Data Stream Representation: An Extensive Survey on Stream Clustering Algorithms. Business and Information Systems Engineering (BISE). (accepted)

Heidekrüger, R., Heuchert, M., Clever, N., & Becker, J. (2018). Towards an Omni-Channel Framework for SME Sales and Service in the B2B Telecommunications Industry. In Proceedings of the Multikonferenz Wirtschaftsinformatik (MKWI 2018), Lüneburg, 386–397.

Heidekrüger, R., Heuchert, M., Clever, N., & Becker, J. (2018). Konstruktion eines Omni-Channel-Frameworks für Sales & Service in KMU in der B2B-Telekommunikationsindustrie. Digital Customer Experience, Edition HMD.

Heuchert, M., Barann, B., Cordes, A.-K., & Becker, J. (2018). An IS Perspective on Omni-Channel Management along the Customer Journey: Development of an Entity-Relationship-Model and a Linkage Concept. In Proceedings of the Multikonferenz Wirtschaftsinformatik 2018, Lüneburg, Deutschland.

Heuchert, M., Barann, B., Cordes, A.-K., & Becker, J. (2018). ‘Entwicklung eines Entity-Relationship-Modells und eines Verknüpfungskonzeptes – eine Betrachtung des Omni-Channel-Managements aus einer Information Systems-Perspektive’. Digital Customer Experience, Edition HMD.

Homann, L., Maleszka, B., Martins, D., & Vossen, G. (2018). A Generic Framework for Collaborative Filtering Based on Social Collective Recommendation. In Proceedings of the International Conference on Computational Collective Intelligence (ICCCI 2018), Bristol, UK.



Core team members of the omni-channel lab with additional experts from partner universities as well as from Arvato CRM business at the strategy summit 2018 in Rothenberge



Experts sharing ideas during the strategy summit in Rothenberge

OUTLOOK

Looking to the future, the Lab will further work on topics such as social analytics, artificial intelligence and omni-channel customer service, and extend its vertical expertise to industries such as automotive, e-commerce and retail. Leveraging insights from the existing academic and business network, the Lab will further promote applied research and collaboration projects to jointly drive innovation in customer experience. For more information about the ERCIS Omni-Channel Lab, please visit:

<https://omni-channel.ercis.org/>



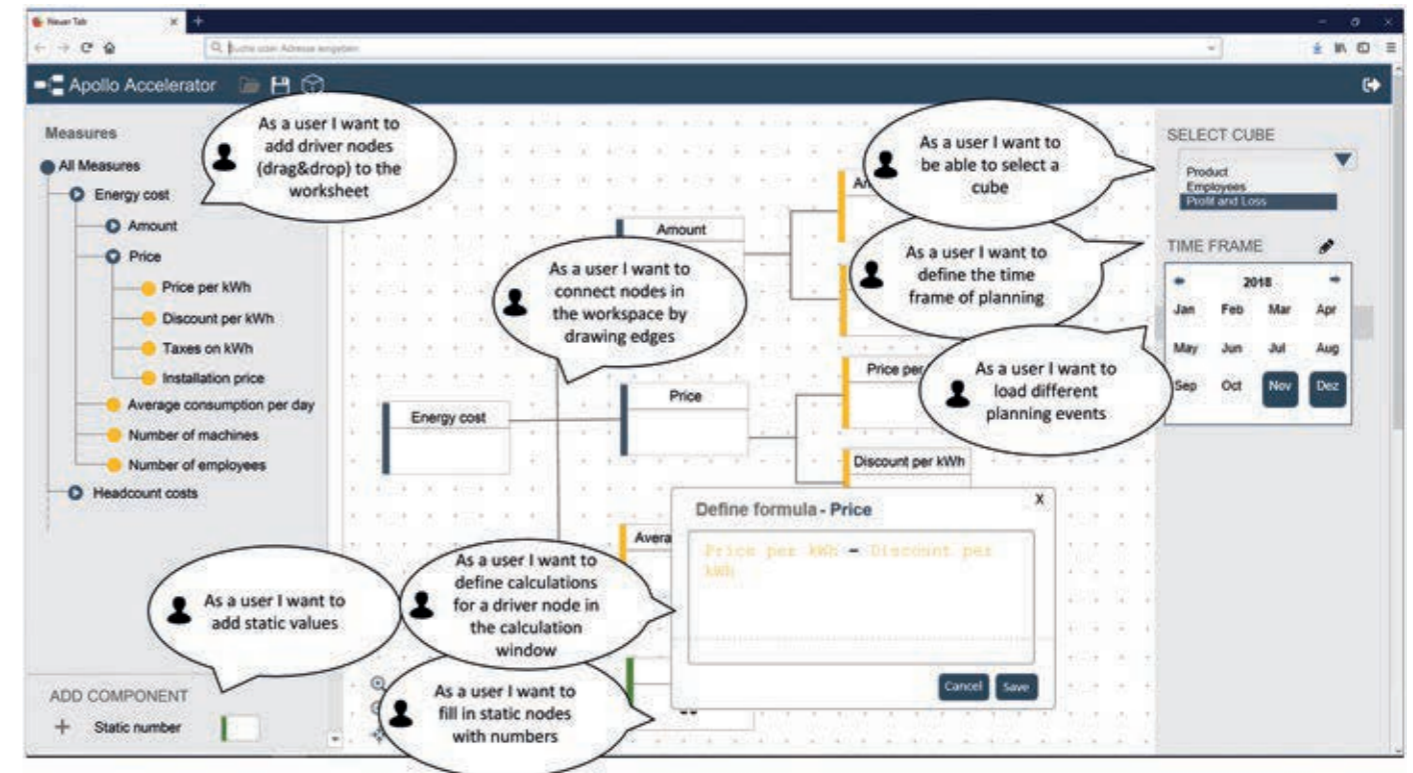
PS_Chatbot_Arvato

PHD SEMINARS AT KLOSTERS



PhD Seminar Klosters

In February 2017 and 2018, Prof. Dr. Stefan Seidel (University of Liechtenstein), Prof. Dr. Nicholas Berente (University of Georgia), Prof. Dr. Roland Holten (Goethe University Frankfurt), Prof. Dr. Jan Mendling (WU Vienna), and Prof. Dr. Christoph Rosenkranz (University of Cologne) conducted Ph.D. seminars at Klosters in Switzerland on the topic of research quality in information systems. About 15 PhD students from a variety of universities presented their research propositions, discussed current topics in the field of information systems, and enjoyed winter sports and tours of the region. The seminar was carried out for the fifth time in 2018 and has become a prestigious and popular seminar on information systems in Europe.



avantum

PROJECT SEMINAR WITH SARACUS “REALTIME ANALYSIS OF CLICKSTREAM DATA AS PART OF THE CUSTOMER JOURNEY”

The aim of the project seminar was to develop a tool for real-time analysis of clickstream data as it is gathered, e.g., in e-commerce shops. The students implemented a prototype, which provides a large variety of visualizations of incoming clickstreams and applies a set of machine learning techniques to gain knowledge about the customer’s journey and buying behaviour. The tool thus paves the way for online customer monitoring and sophisticated product placement of items on the website.

PROJECT SEMINAR WITH AVANTUM

Seven graduate students worked together with our Advisory Board Member avantum on a new method for corporate performance planning and management called “Driver-based planning”. With this approach, budget and forecast processes are being simplified by focusing on business drivers. The goal of the seminar was the extension of avantum’s solution “Apollo” with a driver-based planning module. This module, which was implemented by the students, offers an intuitive and user-friendly modelling of driver trees with an attractive frontend, the flexible and easy definition of calculation rules, as well as the comfortable transfer of driver trees and business logic into the solution, which is based on cognos TM1.



Arvato_PAMBOT

PROJECT SEMINAR “CHATBOT FOR THE EXAMINATION OFFICE”

The main goal of the project seminar together with Arvato was to implement a chatbot for the examination office of the school of business and economics at the University of Münster. The developed chatbot provides students with a comfortable way of accessing exam information such as the date, time and location of the exam. Additionally, it allows the examination office to publish exam information more easily.



Winter School 2018

COOPERATIVE TEACHING BETWEEN THE UNIVERSITY OF LIECHTENSTEIN AND SEVERAL ERCIS PARTNERS

As part of the University of Liechtenstein's master's program in Information Systems (with majors in Business Process Management and Data Science), Prof. Dr. Gottfried Vossen, Dr. Armin Stein, and Dr. Jens Lechtenböcker (all of the University of Münster), and Prof. Dr. Jan Mendling (WU Vienna) visited the University of Liechtenstein, where they delivered lectures for the students. Prof. Dr. Jan vom Brocke and Prof. Dr. Stefan Seidel served as Visiting Professors at our ERCIS member, the National University of Ireland in Galway.

SEVENTH LIECHTENSTEIN WINTER SCHOOL ON BUSINESS PROCESS MANAGEMENT AND DATA SCIENCE

For the seventh time, the University of Liechtenstein organized the Winter School for Business Process Management and Data Science. Thirty bachelor's degree students, including students from all over Europe and ERCIS partner universities, learned about BPM and Data Science from case studies and from input sessions led by lecturers from the University of Liechtenstein and the University of Muenster. Students also visited Hilti AG and Swarovski AG and enjoyed sleigh-riding in the mountains of Liechtenstein.



Study Trip Vienna 2018

STUDY TRIP TO VIENNA 2018

In April 2018, students in the master's program in Information Systems from the University of Liechtenstein travelled to Vienna, where lectures by Prof. Dr. Jan Mendling at the University of Economics and Business (WU), company visits, and cultural tours were on the agenda. For students of more than fifteen nationalities, the excursion was a unique experience to get to know the Austrian capital and the newly opened campus of WU Vienna to gain important competencies they can use in their studies.



Presentation

ERCIS PHD COLLOQUIUM 2018

After two years, the ERCIS offered another PhD Colloquium, this time in Pto. Pollensa, Spain. Following the tradition of many other colloquia, the goals of this were intensively discussing the PhD endeavour of each participant, providing multi-perspective feedback, networking them, and enjoying the time together.

The PhD candidates had to submit an eight to ten pages dissertation paper, summarizing motivation, related work, problem statement/research gap, proposed research approach and time frame. Furthermore, each of the students had to conduct peer reviews of two other dissertation papers and moderate the presentations

Finally, they had to present their research for approximately 30 minutes without any means but a whiteboard and pens, leaving another hour for discussion. This gave eight students the opportunity to participate, two coming from the University of Liechtenstein, one from the University of Viterbo, two from the University of Münster, two from the University of Paderborn and one from the University of Duisburg-Essen.



Sailing

Alessio Maria Braccini (Tuscia University), Armin Stein, Katrin Bergener (University of Münster), Jens Pöppelbuß (Ruhr-Universität Bochum), Øystein Sæbø (University of Agder), Rosemary Van Der Meer (Deakins University), and Sara Hofmann (University of Bremen, now University of Agder) served as faculty.

Aside from discussing the research, the participants also used the chance to either learn sailing together or to advance their nautical knowledge. This resulted in a great team spirit, leveraging the idea of the network to the junior scholars. The 2019 DC will again take place June 22–29.



ERCIS@ECIS 2018 in Portsmouth

ERCIS@ECIS

Following the tradition, ERCIS members met at the European Conference on Information Systems (ECIS) in Portsmouth, United Kingdom, in June 2018. This year's meeting set a record in the number of participants. More than 60 invited guests and members of the ERCIS network took advantage of the opportunity to have a chat and exchange views. We are already looking forward to our next ERCIS@ECIS meeting in Sweden next year!

10TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL COLLECTIVE INTELLIGENCE

The 10th International Conference on Computational Collective Intelligence (IC-CCI 2018) took place in Bristol, UK, September 5–7, 2018. The conference was co-organized by the University of the West of England and the Wrocław University of Science and Technology. The conference was run under the patronage of the IEEE SMC Technical Committee on Computational Collective Intelligence.

The conference received over 240 submissions from 39 countries all over the world. Each paper was reviewed by two to four members of the international Program Committee (PC) of either the main track or one of the special sessions. Finally, the committee selected 98 best papers for oral presentation and publication in two volumes of the Lecture Notes in Artificial Intelligence series.

THE 10TH JUBILEE ACIIDS 2018 THE UNIVERSITY OF QUANG BINH

On March 9–21, 2018, the 10th Jubilee Asian Conference on Intelligent Information and Database Systems (ACIIDS 2018) took place at the University of Quang Binh (Dong Hoi, Vietnam). The conference was organized in co-operation with the ERCIS, the IEEE SMC Technical Committee on Computational Collective Intelligence, the University of Newcastle (Australia), the Bina Nusantara University (Indonesia), the Yeungnam University (Korea), Leiden University (Netherlands), the Universiti Teknologi Malaysia (Malaysia), the Ton Duc Thang University (Vietnam), and the Vietnam National University, Hanoi (Vietnam). Out of 400 submitted papers from 42 countries, 133 papers were selected for publication in the two volumes of LNCS/LNAI (Vol. 10751 and 10752). Four keynote lectures were delivered by Thomas Bäck from Leiden University, The Netherlands, Lipo Wang from Nanyang Technological University, Singapore, Satoshi Tojo from Japan Advanced Institute of Science and Technology, Japan, and Nguyen Huu Duc from Vietnam National University, Hanoi, Vietnam.

ERCIS ADVISORY BOARD MEETINGS 2018 IN MÜNSTER



ERCIS Advisory Board Meeting in October 2018

This year, we had again two Advisory Board Meetings, the first in January and the second in October. Researchers from the ERCIS headquarters and representatives of the member companies arvato, CLAAS, DMI, Informationsfabrik, IQ-optimize, Lidl, owncloud, SAP, saracus, Westphalia Data Lab, and zeb met in Münster for inspiring talks and discussions on various topics.

In January, zeb invited us to have the Advisory Board Meeting at zeb tower where we had a fantastic view over the city while discussing different topics. After a warm welcome by Jens Eickbusch from zeb and a recap on recent ERCIS activities by Jörg Becker and Armin Stein, DMI, one of our new Advisory Board Members presented themselves. Further topics that day were digitization in context with consultation models, Digital Service Innovations, a competence center dealing with small and medium-sized enterprises, possibilities for cooperation between practice and research.

Many thanks again to zeb for having us!

In October, we met once again in Münster's palace, which houses the university. After a short introduction and recap on the ERCIS activities in 2018, Christian Grimme presented the newly founded ERCIS Competence Center "Social Media Analytics". Followed by Karsten Kraume, who gave us a short update about the ERCIS Omnichannel-Lab, Westphalia Data Lab, our newest Advisory Board Member, was presented by Reiner Kurzhals. In the afternoon, Nadine Ogonek gave an introduction into Design Thinking and Katrin Bergener informed about EU funding for companies.

Thanks to all participants, we had fruitful and inspiring discussions!

We are looking forward to our next meeting!

ERCIS DISRUPTS: BLOCKCHAIN

April 24, 2018, Münster



The rise of Blockchain promises a world where socio-economic transactions are becoming trustful and democratic. However, as Blockchain potentially goes mainstream, its diffusion in the industry cannot overlook the politics underpinning technological disruption.

Therefore, the second ERCIS Disrupts event looked into the Blockchain phenomenon. During the interdisciplinary workshop, scholars and practitioners from University College Dublin, the University of Zürich, ERCIS and Octo Technology engaged with Blockchain debates at three levels:

Technical level: Fundamental principles of the Blockchain as infrastructure: Car Dossier and France connect as use cases.

Organizational level: Cryptocurrencies as examples of disruptive technologies. The governance of and by the Blockchain.

Paradigmatic level: Organizational theory and the politics of technological change. Blockchain's transgressive hype before it becomes blackboxed and invisible.

WORKSHOP ON COLLABORATION IN THE DIGITAL AGE – HOW TECHNOLOGY ENABLES INDIVIDUALS, TEAMS, AND BUSINESS



Collaboration in the digital age

The proliferation of digital technologies has made the world at once a smaller and a more complex place. While established business practices are disrupted, digital technology equally affords new opportunities. Collaboration has become a way for individuals, teams, and businesses to cope with complexity and harness new opportunities. While it is now possible to connect almost instantly and seamlessly across the globe, collaboration comes at a cost; it requires new skills and hidden ‘collaboration work’, and the need to renegotiate the fair distribution of value in multi-stakeholder network arrangements.

The workshop (October 15–16, 2018, in Münster) brought together more than 30 international scholars interested in the collaboration of teams, cooperatives, projects, and new cooperative systems based on resource sharing, covering a range of sectors from the sharing economy, health care, large project businesses to public sector collaboration. It provided an opportunity to link different theoretical, such as phenomenology and Goffman’s theatre metaphor, and empirical angles, e.g. social entrepreneurship or collaboration of mobility providers in Switzerland to models of collaboration (or lack thereof) in academia and academic publishing.

14TH GLOBAL OPTIMIZATION WORKSHOP (LEGO 2018) HELD IN LEIDEN UNIVERSITY



Lego-group

Michael Emmerich and André Deutz from the Leiden Institute of Advanced Computer Science (LIACS), Sander Hille from the Mathematical Institute of Leiden University (MI) and Yaroslav Sergeyev, president of the International Society of Global Optimization (iSoGo), welcomed seventy global optimization specialists at the Snellius and Poort Building in Leiden (cf. <http://moda.liacs.nl/LeGO>). The four-day workshop brought together leading experts and young researchers from computational science and mathematical optimization, sharing the newest insights on solving difficult non-convex optimization problems. The program featured a special track on Multiobjective Global Optimization, organized by Iryna Yevseyeva of the De Montfort University in Leicester, United Kingdom. Keynote Speakers at LeGO 2018 were: Sergiy Butenko, Kaisa Miettinen, Panos M. Pardalos, Yaroslav D. Sergeyev, and Antanas Žilinskas.



BPM Round Table

BPM ROUND TABLE

The 12th BPM Round Table on “Digital Innovation and Transformation in Practice” took place on October 12, 2017, at the University of Liechtenstein. With the participation of Prof. Dr. Jan Mendling (WU Vienna) and a presentation by the Lufthansa Technik Group, the book BPM Cases was officially launched and the “BPM Executive Certificate” program was presented.



ICIST2018_logo

THE 24TH INTERNATIONAL CONFERENCE ON INFORMATION AND SOFTWARE TECHNOLOGIES (ICIST 2018)

Kaunas University of Technology hosted the ICIST on October 4–6th in Vilnius. The goal of this conference is to bring together researchers, engineers, developers and practitioners from academia and industry working in the areas of Information Systems, Business Intelligence, Software Engineering, and Information Technology Applications. The conference features original research and application papers on the theory, design and implementation of modern information systems, software systems, and IT applications. The 2018 edition of the event was held for the first time in the resort complex Vilnius Grand Resort near the Lithuanian capital city of Vilnius. The conference included 3 key note presentations, two tutorials, one workshop, and 36 paper presentations. Proceedings of the event were published as a volume of Springer-Verlag CCIS series.



Launch Pad 2017

ERCIS LAUNCH PAD

ERCIS Launch Pad – the annual IT business ideas competition of ERCIS – was held for the 11th time on 28th November 2018. Keeping up the tradition of past Launch Pads, the event serves as platform for founders and potential founders from all over Germany to present their ideas to a top-class jury of founders, funders, and academics. As in previous years, participants of the 11th Launch Pad can win cash and attractive prizes.

For the 10th edition, which took place in 2017, the jury decided to invite seven finalists to pitch their ideas. After entertaining presentations and intense discussions, Refined Laser Systems won the award for best overall concept (sponsored by noventum IT Management Consulting and Fiducia & GAD IT AG) for their platform for high-speed microscopes based on digital

laser technology. Escamed convinced with their app for dietary recommendations to reduce high levels of blood pressure and won the regional medium-sized business award (sponsored by codecentric). Free-D Printing presented a strategy and system for 3D printing with free-form layers and won the award for best scientific grounding (sponsored by ERCIS and NRW.Bank), while StriveCDN won the audience award with a technology for peer-assisted live streaming, and eduSense received the PayPal start-up support to continue their efforts towards digital education.



arvato

BERTELSMANN



OUR COMPANY

We are Arvato CRM Solutions. We design, deliver and differentiate customer service on behalf of some of the world's most respected brands.

Customer service is about technology, because constantly evolving technology is driving up customer expectations and has the power to simplify service delivery for our clients too. So naturally, we support their customers and their need for competitive advantage.

Customer service demands experience, because service is one of our client's most valuable brand assets and becoming ever more complex to deliver. Differentiated by our experience, we are global, have know-how across the customer journey and take a long-term perspective. So we're our clients' partner for the duration.

Above all, customer service is about people, because service is a human thing even if it's delivered by a robot. And it's people that apply technology, draw on experience, and add value. Our enterprising spirit means we're defined by our people, who deliver effectively in the face of the unpredictable, shape the future, drive global consistency as well as individual nuance.

Driven by technology and differentiated by experience, we ensure our clients perform. But powered by people we also help them to transform.

OUR CORE AREAS OF INTEREST/RESEARCH AND INNOVATION

- Customer Experience Management (CX)
- Omni-channel Customer Relationship Management
- Big Data and advanced CRM Analytics
- Service Delivery Automation (RPA, AI etc.)

WORKING FOR ARVATO

Customer service is about people. It's our people that apply technology, draw on experience, and add value for our clients and their customers. Whether you're an experienced professional or starting out on your career, we can offer you the opportunities, support and room to grow that you'd expect from a global leader. To find out more about the opportunities we can offer, please go to the careers pages of our website.

<https://crm.arvato.com/en/career.html>

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THE OMNI-CHANNEL LAB – POWERED BY ARVATO

The Omni-Channel Lab combines ERCIS's established academic research network and teaching facilities with Arvato's practical expertise of handling 1.7 million Omni-Channel interactions every day for many of the world's best-known brands. This means that it's perfectly placed to research innovative solutions and new concepts for Omni-Channel communication challenges.

For more information please go to <https://omni-channel.ercis.org/> or check out the introduction in the Network Research Activities section of this annual report.

ARVATO – FAST FACTS

Arvato CRM Solutions has over 45,000 people at 100+ customer service centers in 27 countries speaking 35 languages and is recognized as a 'clear leader' in the global customer services/customer experience (CX) sector¹. It is a part of Arvato, the world's third largest BPO provider² and, in addition to customer services, the company also provides supply chain solutions, finance business process outsourcing (BPO), and IT solutions, with total revenues of €3.8 billion in 2017.

¹CCO – Service Provider Landscape with PEAK Matrix™ Assessment 2018 by Everest Group June 2018.

²BPO Top 50 by HFS Research July 2017.



All for One Steeb Gruppe

BUSINESS ANALYTICS AT ITS BEST

We are Business Analytics specialist for the D/A/CH region. Our core competencies include Data Management, Reporting, Planning and Advanced Analytics. Our success in these areas is based on best practices from more than 1,000 consulting projects and more than 650 years of consulting experience with a 100% go-live ratio.

OUR FOCUS

Systematic performance improvement with concepts, technologies and agile leadership.



DATA MANAGEMENT & BIG DATA

We support the development of modern big data architectures that meet the requirements for data quality, consistency and security and offer an ideal basis for information gain.

REPORTING & ANALYTICS

Visualising information in a target-group-oriented and user-friendly way, preparing reports and analyses as quickly and flexibly as possible, gaining deep insights into data – we make it possible!

ARTIFICIAL INTELLIGENCE & ADVANCED ANALYTICS

By using proven technologies and methods, we extend the automation of process chains and increase the speed for gaining information.

PLANNING & FORECASTING

From integrated business planning to an innovative Predictive Planning Optimization Approach, we offer an efficient solution that meets today's requirements.

Our solutions are based on the market-leading technologies of IBM and SAP. We are an IBM Gold Business Partner and have a leading position in the market, especially in the area of Planning Analytics. As part of the All for One Steeb AG, we employ more than 100 SAP Business Analytics consultants in the SAP area and have a comprehensive portfolio of efficiency-enhancing add-on solutions and our own application management.

OUR SERVICES

- Tools for agile strategy implementation
- Business Analytics strategy and organization
- Professional and technical analysis and conception
- Implementation of analytics solutions
- System checks and optimization
- Innovation Lab

AN EXTRACT OF OUR BUSINESS SOLUTIONS



Integrated Planning and Reporting:
APOLLO is a modular platform for managing your planning, analysis and reporting processes. The integrated reporting functions are based on the Bissantz DeltaMaster –

the optimal tool for controllers who want to explain the causes of performance deviations quickly and comprehensively.



Innovative Reporting with SAP technologies:

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The avantum Master Data Management: efficient, user friendly and stable. AMADEUS replaces the elaborate and error-prone structure maintenance of Excel and CSV files and puts an end to structural frustration.

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As a consultant at avantum consult you work closely with our customers in all industries and together with your colleagues. Within our projects, you will quickly take on responsibility and assume a variety of tasks.

We are always looking for talented and motivated employees in Dusseldorf, Filderstadt, Munich, Hamburg and Zurich.

Our hierarchy model allows for the following level and positions:

- Assistant Consultant
- Consultant
- Senior Consultant
- Manager/Solution Expert
- Senior Manager/Senior Solution Expert

Current vacancies can be found at: www.avantum.de/karriere

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ABOUT THE COMPANY

As a leading supplier of merchandise management systems, Bison offers complete solutions for retail. Bison has its headquarters in Sursee, employs approximately 300 staff and generates a turnover of over EUR 70 million. With over 30 years of market experience, Bison makes a reliable, secure contribution to the success of its customers. Each customer receives comprehensive and long-term support, with a focus on mutual trust and the protection of customers' IT investments.

Bison Retail Solution was specially developed for the retail sector. This solution covers the core processes for goods management and at the point of sale in full. By integrating a solution for traceability, Bison offers a modern, up-to-date package of solutions. Based on the standard solution and individually tailored to customer preferences, considerable added value is created for the customer.

The Bison Retail expertise hub has comprehensive process knowledge and can provide and implement technical solutions, above all in all areas relating to multi-crosschannel®. Bison Process enables a crosschannel sales approach and process management, including in-store, e-commerce and m-commerce. This industry model provides retail-specific processes. These can be individually configured to meet the company's requirements, without programming and without losing the release capabilities of the software. The open architecture of Bison Process ensures the company a high level of investment protection; the software is always a step ahead of challenges in the market, both in terms of its technology and its functionality.

The product portfolio is complemented by POS solutions, electronic shelf labelling (ESL), mobile solutions for mobile end devices and digital signage solutions. Bison's modern POS solution can be perfectly integrated into existing system environments thanks to the modular structure and its exceptional flexibility. Thanks to the ESL concept, the headquarters or individual branches can respond quickly to changing market or price situations. The wireless base station simplifies internal processes and creates a direct connection between the shelf and POS. The high quality display is based on leading e-paper technology and guarantees optimum readability and no reflections on the screen. In addition, the electronic shelf labelling at the POS creates new possibilities in terms of information. This is used not only for product identification and price labelling, but also in combination with specially developed apps which provides further useful services for the customer in terms of traceability of the product, product features, contents (allergens) etc. Thanks to the mobile solutions, normal Smartphone devices can be turned into powerful mobile hand-held devices. The scanning solutions include a barcode scanner, a magnetic card reader and an optional Bluetooth component to connect a mobile printer. The RFID option vastly expands the range of uses. Thanks to standard or individually programmed applications, the devices offer a multitude of application possibilities, e.g. stocktaking, order creation, goods-in process and picking.

Bison offers innovative communication options through digital signage. The solutions can be managed efficiently thanks to the simple user functionality and automatic interfaces. Bison is a general contractor and covers all the processes of a modern retailer using integrated solutions, from the central ERP system to branch management to POS systems and digital signage.



TOPICS OF INTEREST

- Interest in European (sales) partnerships
- Development of new approaches to tackling retail-specific questions and problem areas bearing in mind the cloud approach
- Integration of Zebra Technologies, iPod, iPhone, iPad and Samsung Galaxy in operating procedures
- E-Paper integration options (e.g. Electronic Shelf Labeling)

JOB OPPORTUNITIES

- For students: Diploma/bachelor theses in the fields of IT, software development and marketing
- For graduates: Consultants, software developers, project managers and sales representatives

For further information please visit www.bison-group.com



ABOUT THE COMPANY

There are very few companies that have influenced the development of agricultural technology, and also agriculture itself, as much as CLAAS has. What started in 1913 with the manufacture of powerful straw binders has become a leading giant on the global market: CLAAS is one of the world leaders in the production of agricultural technology. The company is the European market leader in combine harvesters and world market leader for self-propelled harvesters. Its tractors, balers and forage harvesting machines also hold top positions in agricultural technology worldwide. This is supported by the most state-of-the-art information technology. Machine-to-machine communication, intelligent networking, the improvement of the harvesting process as a whole – Industry 4.0 is already the company's reality and sustainability is its principle.

CLAAS products ensure efficiency in agricultural production and they go easy on natural resources as they continuously reduce energy consumption. Around 11,000 employees are engaged in this task in 140 countries; talented people from all professions, who make their daily contribution towards feeding the world.

TOPICS OF INTEREST

- Connected Machines
- Farming 4.0
- Omni-Channel Customer Experience
- Precision Farming
- Data Management

Up until just a few years ago, the trend in agricultural engineering was characterized by increasingly large machines. Today, however, the harvest chain is seeing many innovations coming through, especially in drive technology, machine intelligence and networking. In 2010, CLAAS consolidated its range of electronics expertise and, since then, has placed it under a collective



name. "Efficient Agriculture Systems", abbreviated as "EASY", is the CLAAS collective term, which encompasses machine control and performance optimization, steering systems, precision farming and monitoring, software solutions and services.

However, digital transformation has not only changed the technology of our machines. New product features, different license models and data driven business models require our business unit for sales and service to rethink our traditional way of doing business. At CLAAS we are striving to digitize all traditional customer touchpoints for each and every farmer. Our online and offline world is merging into one Omni-Channel customer experience.

CLAAS is investing in its digital future and has now laid the foundations for a new electronics development center in Dissen, Lower Saxony.

JOB OPPORTUNITIES

CLAAS is special because it is a family-owned company with a long-term, forward-looking approach, which is based on the commitment of its employees. At CLAAS, you won't find 'just another job'. You will

instead face the challenging task of continuously improving harvesting performance through innovative technology.

- Selected vacancies in Germany for professionals: Senior Software Developer for Operating Systems, Software Developer for Embedded Software, Application Developer SAP, Software Developer CRM, Software Developer CMS

- Selected vacancies in Germany for students: Thesis student for SharePoint solutions, Internship Digital Transformation, Internship Online Business After Sales

If you have any questions about our current international vacancies, our contacts at the respective locations are happy to help.

Further information: www.claas.jobs

Instagram: [@claas_careers](https://www.instagram.com/claas_careers)

D·M·I

ARCHIVIERUNG

ABOUT THE COMPANY

DMI takes responsibility for the digital archiving of patient records and provision in client software systems. Since 1966, the specialised service provider has been providing hospitals with continuous support in the optimisation of information-based processes and with fully compliant archiving throughout constant changes in technology and framework conditions. In production centres and at clients' locations, DMI staff digitise, qualify, integrate and archive every second patient record for in-patients based on certified information security and data protection guidelines and ensure seamless integration into health IT systems. Through its interface expertise with all data management HIS architectures, DMI enables the consolidation of digitised paper-based patient records with electronic documents and data, as well as medical image documentation, in audit-proof long-term archives. Interoperability (the ability of systems to interact with one another), including on a data level, is the basis for the integration and sustainability of our solutions.

DMI provides its clients with lean, secure, efficient processes through consolidated patient records.

Our relationships with our clients are shaped by commitment, respect and fairness. The quality of our service business is based on the professional and social skills of our employees.

TOPICS OF INTEREST

- Consolidating medical records including electronic and digitized documents



ESB_Professional/Shutterstock.com

- Interoperable IT architectures based on current standards
- Audit-proof digital archiving for compliance
- Deep integration of archived documents into administrative and clinical workflows for enabling effective clinical processes for best patient outcomes
- The link between medical informatics and medical research as well as routine practice in healthcare

DMI AS AN EMPLOYER

DMI is not your typical medium-sized company: it is an owner-managed organization of roughly 1,000 highly motivated staff and a flat hierarchy. Its approach is long-term and sustainable, with continuing education of employees as a key ingredient. With a focus on the German healthcare market and additional activities in banking, insurance, general business, and the public domain, DMI offers high-value services:

- digitization, qualification, consolidation, presentation, and archiving of documents
- integration into information-based processes
- analysis of documentation process landscapes and support for optimization aiming at effectiveness and compliance.

Company headquarters are situated in the pulsating university city of Münster in North Rhine-Westphalia (NRW); service centers are located in the castle town of Leisnig near Leipzig (Saxony) and Essen (the "Green Capital", NRW).

JOB OPPORTUNITIES

Are you up to this challenge? DMI's team members are committed to achieving results for customers in a dynamic ecosystem of evolving technologies and continuously changing customer demands. A multitude of benefits make DMI an attractive employer.

- Selected vacancies in Germany for professionals: (senior) software developers for applications, experts for IT infrastructures and networks
- Selected vacancies in Germany for students: thesis students (IT / software development) for innovation in documentation and archiving enabled by state-of-the-art IT and by Digital Transformation.

FOR MORE INFORMATION, CONTACT:

Dr. Viola Henke

Tel +49 2534 8005-0
Mobile +49 151 40798718
viola.henke@dmi.de

www.dmi.de



ABOUT THE COMPANY

At Hilti we create and design leading-edge technology, software and services, which power the professional construction industry. We're global, based in over 125 countries with more than 27,000 employees. Everyday our technologies support awe-inspiring feats of engineering around the world – from the famous bullet train in Japan to metro tunnels deep under the largest cities on earth. We offer a 360 degrees service for your build – from software for design, products and tools for work onsite to training, repairs, testing and consultancy. We're a one-stop shop for building, worldwide.

Our customers are at the heart of everything we do. That's why we run our own direct sales teams, with over two-thirds of our Hilti team members working directly with our customers every day. That's 250,000 interactions worldwide online, on the phone and onsite. And at Hilti we don't believe in just sitting in the office. Our sales teams and field engineers work closely with our customers onsite, finding solutions to make builds faster, easier and safer. All this drives our innovation, because we know and understand what our customers really need.

At Hilti we like to do things differently. We create technologies, software and services, which clearly stand out from the rest. We run our own research and design labs, working with top technical universities and partners, all over the world. We make our own products in Hilti factories and with external partners, making sure all our products match the same high quality and standards. And we are a privately-owned company, founded in 1941 by Martin Hilti



and still held by the Hilti family today. So, we are looking to build for the future and not for a short-term gain.

And, Hilti is a great place for you to show your worth as you learn, grow and carve-out your career in Information Technology. Global IT within Hilti is a truly global team with main hubs in Buchs (Switzerland), Kuala Lumpur (Malaysia), and Plano/Tulsa (USA). All locations have highly competent teams who work very closely together. Hilti's Global IT team is known for their focus on sustainable value creation by translating latest IT innovations into value creating solutions and services.

So, have a career with the best! Become a valuable member in a highly professional and international team of IT experts and meet the challenges of a global multinational company using latest technologies.

TOPICS OF INTEREST

- Business Process Management
- Information Management
- IT Project Management & Business Excellence
- Smart Workplace & Client Technology
- Digital Customer Collaboration & Connected Economies
- IT Security & Governance
- Enterprise Computing, Cloud Deployment & Enterprise Architecture

JOB OPPORTUNITIES IN OUR STRATEGIC IT OFFICE IN BUCHS, SWITZERLAND

- Junior IT Consultants for our Process Competence Center
- IT Project Managers e.g. for Digital Workplace
- Data Scientists for Process Mining
- IT System Engineers and Solution Architects for various IT Infrastructure teams
- Interns or thesis students: e.g. on S/4 HANA Implementation in Supply Management, Product Data Management, IT Project Stakeholder Communication, Collaboration and Messaging Services, or 5G Networking
- Hilti Fellowship program (in cooperation with University of Liechtenstein)

Find more open positions on <https://careers.hilti.li/en-li/corporate-it> or get in touch with us directly.



ABOUT THE COMPANY

Where quick reactions to ever changing business requirements are of paramount importance and subsequent decisions have a wide impact, we provide the pertinent facts. Informationsfabrik consultants are experts in the areas of Business Analytics, Business Intelligence, and Data Science. Our focus lies on the financial and insurance service industry, and the banking sector.

WE PRODUCE INFORMATION

Decision making in companies is based on the evaluation and analysis of information. Be it for intelligent marketing, for improved customer communications and recommender systems, or for determining churn probabilities: Accurate information to act upon has become a major asset for any business process. With methods provided by Data Analytics and Data Science, a whole lot of new possibilities to extract and condense information from data came into existence.

We support our customers in several analytics subject areas. Our team shares the aspiration to deliver information in the correct format to the right person at the right time using modern technologies and our innovative approaches.

Visual Analytics promises a fast and effective way to get a thorough understanding of business data. No means are better suited to give meaning to data than a visual form of representation. We support our customers by creating diagrams and conveying the required knowledge. In fact, we

also empower our clients to conduct ad-hoc analysis and reports by providing an environment in the sense of BI Self-Service which can be used by power- or business users without IT assistance. Eventually this leads to faster and more accurate decision-making. Of course, we will make sure that any data governance and legal obligations are met.

We design and implement BI, DWH and Big Data solutions. In a Data Warehouse data from different source systems and of varying formats is consolidated, stored for data analysis and ultimately used to support business decisions.

Our highly qualified staff has acquired profound knowledge for conception and design of such solutions and are familiar with new modelling and architecture paradigms.

Another important subject area is Big Data. In recent years the amount of semi- or unstructured data sources has massively in-

creased. At the same time the challenge of realizing storage, information extraction, and information integration for analysis rises. We support our customers to cope with the difficulty of complex Big Data solutions.

Last, but not least we employ Data Science and Predictive Analytics methods to create new possibilities for extracting knowledge from our client's data. We offer guidance on planning and executing Data Science projects. Following our self-developed approach, shaped by the experience from hundreds of projects, we handle vast amounts of data and deliver high quality information and predictions.

We collaborate closely with our customers and help to expand their knowledge with individual trainings and valuable coaching. Since our foundation in 2000, we managed to become renowned business analytics experts. To give you certainty in a couple of mouse clicks is the goal we have devoted ourselves to.



ABOUT THE COMPANY

The retail company Lidl is one of the leading companies in the food retail sector in Germany and Europe. We place value on an optimal price-performance ratio for our customers. At Lidl, we are convinced of our business model "best quality at the best possible price" – in a pleasant shopping environment. We are a retail chain with a systematic store concept. Simplicity and process orientation determine the daily activities in the stores, the regional distribution centers and the national subsidiaries. Lidl is represented in 30 countries worldwide – in Europe, USA and Hong Kong. Lidl operates some 10,500 stores, more than 150 distribution centers in currently 28 countries and has some 260,000 employees. Dynamism in daily implementation, performance in the results and fairness in dealing with one another characterize working at Lidl across the globe. The headquarter of the company is still based in Neckarsulm. In the 2017 financial year, Lidl generated revenues of 74,6 billion Euros.

Our guiding principle: "If you stop getting better, you stop being good!" Our corporate culture comprises the willingness to develop ourselves further, adapt to new circumstances and continually improve ourselves. We go about this in a dynamic and team-oriented way. Our willingness to do things differently or to adapt existing concepts is what makes us successful.

Efficient processes form the basis for a successful business model that offers customers in Europe the best product quality at the best price. A powerful IT system and



application landscape makes up a significant portion of constant process optimization. The IT landscape at Lidl is in the biggest transitional phase in the company's history. The strategic alignment places the focus on closely coordinated international collaboration and digitalization. IT at Lidl is tasked with ensuring seamless interconnectivity with a highly available and integrated system landscape and the application of the latest technologies. Lidl's high-performing, motivated and entrepreneurially thinking IT team safeguards its success by means of close collaboration along with intensive and fair interconnectivity and cooperation with the world's leading software- and technology companies such as SAP, Intel, Apple, Microsoft, GK Software, Teradata, MicroStrategy and implementation partners such as KPS, Software AG, Ernst & Young, PricewaterhouseCoopers and MGM. This is supplemented by projects with research institutes at renowned universities.

TOPICS OF INTEREST

Digital Transformation and Innovations, Business Transformation, Cloud, Informatica, Master Data Management, SAP HANA, Big Data, Business Intelligence & Analytics, SAP Retail/EWM/CAR, Salesforce, CRM, SuccessFactors, GK Software, Hybris, Solu-

tion Development, Design Thinking, Conversational Commerce (Chatbot, Voicebot), Artificial Intelligence, Google

JOB OPPORTUNITIES

In a wide range of exciting tasks and global projects, employees work in a dedicated, independent and cheerful way towards providing optimal support for the business of Europe's largest retail company with respect to assisting global business processes, and designing, developing and rolling out systems. Further, they ensure a highly available IT system and application landscape as well as ultra-modern high-end technologies. Goals: Using one IT platform and system landscape to reduce the complexity of applications in an agile way and to place emphasis on the user's benefits.

Become part of IT at Lidl – a wide range of exciting tasks await you! We are looking for go-getters who hit the ground running, always think ahead and enable to make things happen. We offer a variety of opportunities from internships to permanent positions.

Lidl. More IT than you might think! Find out about our attractive job offers at jobs.lidl.de, xing.com/company/lidl, twitter.com/lidl

Work-Life-Balance
**YOUR JOBOPPORTUNITIES
AT INFORMATIONSFABRIK**



- Data Scientist
- Junior Big Data Engineer
- Full Stack Web Developer
- Devops Engineer
- Internship

Send your application to:
personal@informationsfabrik.de

For further information please visit:
www.informationsfabrik.de



ABOUT THE COMPANY

The PICTURE GmbH intends to promote organisations in their modernisation efforts. We combine a methodical approach, technical support and considerable process expertise with a sustainable qualification approach. This integrated approach helps to achieve success in process management. The PICTURE GmbH is a spin-off of the University of Münster, founded in 2007 by Lars Algermissen and Thorsten Falk. Thereby the PICTURE GmbH stays connected with the university and still benefits from a transfer of knowledge. The core business segment of the PICTURE GmbH is process consulting, process analysis and organisational design. The PICTURE GmbH is a consulting firm as well as a software company with consultants and developers specialised on process consulting. The company is well known for the PICTURE method and the PICTURE platform, which in combination allow describing, analysing and optimising business processes within organizations.

THE PICTURE METHOD – EASY. EFFECTIVE. EFFICIENT.

On the basis of 24 building blocks the Picture method provides the opportunity of process controlling by gathering and illustrating process data in a plain and transparent manner.

This method of process modelling lays the foundation for an extensive business assessment, as it offers a target-oriented and efficient way to analyse the coherencies of a company's organisational structure and business procedures.

The following illustration furnishes a brief overview about the Picture method:

Self-Explanatory

Simplified process modelling due to easy-to-use an intuitive components.

Standardized Process Description

Increased comparability and analysability due to a formal and contentual standardisation of the description level.

Instruction and Integration of Employees

Due to its simplicity it enables employees to adopt this model quickly and fosters staff acceptance.

Flexibility in Process Description

The PICTURE method can be personalised according to the individual requirements of organisations.

Efficient Process Modelling and Activity Analysis

The 24 building blocks enable to filter essential information for further analysis.

THE PICTURE PLATFORM

The Picture method is embedded in the web-based Picture platform. This platform serves to support process management within organisations as well as inter-site

projects. The PICTURE platform is tailored to the special needs of organisations and aims to provide a vivid, precise and generally intelligible methodology to illustrate these needs through customised processes.

Visit our website www.picture-gmbh.de

JOB OPPORTUNITIES

Job Opportunities at the PICTURE GmbH:

- (Junior) Sales Consultant (f / m)
- (Junior) Consultant
- (Senior) Consultant
- Software Developer
- Student Assistant (f / m)

TOPICS OF INTEREST

- Process management and optimisation
- Quality Management and Risk Management
- Organizational review
- Knowledge Management
- Task and Product Review
- Software implementation
- Process Benchmarking
- Change Management
- Process-oriented Budgeted Consolidation
- Implementation of Document Management Systems
- Reorganisation Studies
- Interface Analyses,
- Implementation of Software



25 YEARS OF CONSULTING AND SYSTEM INTEGRATION FOR BIG DATA, DATA WAREHOUSE, BUSINESS INTELLIGENCE, CORPORATE PERFORMANCE MANAGEMENT AND ANALYTICAL CUSTOMER RELATIONSHIP MANAGEMENT

Analytic Systems

- Reporting & Analysis
- Cockpits & Scorecards
- Planning Systems
- Data Modelling
- Mobile BI
- Predictive Analytics
- BI Reviews
- Analytic CRM
- Campaign Management



Integration Architecture

- Data Governance
- Architectures for analytic Systems
- Data Warehouse (ETL-Processes)
- Data Quality
- Master Data Management

New Topics

- Big Data: Hadoop
- Cloud Analytics
- Agile DWH / Scrum
- Data Vault
- Machine Learning
- Data Virtualization
- DWH Automation
- Social Media Monitoring

ABOUT THE COMPANY

saracus is one of the leading independent consulting companies for big data, data warehouse, business intelligence and customer relationship management in Germany and Switzerland with more than 60 consultants. Over the last 25 years, saracus has amassed a wealth of experience in more than 300 various projects. Our impressive customer list and customer testimonials are the best proof of how successful projects result in satisfied customers.

saracus competence and portfolio of services

It is the stated vision of saracus to increase the analytical competence of companies and non-profit organizations in order to specifically strengthen the competitive position of these customers. The instruments for reaching this goal are pithily summarized with the terms big data, data warehouse, business intelligence and analytical customer relationship management. The services provided by saracus cover all aspects of these topics.

DWtec® and DWinsurance

Data warehouse projects are very complex regarding to requirements of skills, processes, technology and general conditions within the client's corporation. Accordingly the process model has to accommodate this complexity. DWtec® is the process model of saracus for data warehousing projects; it is based on long term experiences and gets updated permanently. Since 2012 DWtec® has been extended by comprehensive sectoral data models – first of all, for the sector insurance: DWinsurance. Fur-

ther data models (e.g. for retail, telecommunication, manufacturing) will follow.

Big Data academy

The Big Data academy allows saracus to make its practically orientated expertise available to customers in numerous seminars on a wide range of big data and BI topics. These include training courses such as introduction in big data, big data strategy, Hadoop administration training, Hadoop developer training, dimensional data modelling, data quality and ETL processes. These seminars are also offered inhouse. For information on the latest offers and to subscribe to the newsletter, visit www.saracus.com.

Partnerships

saracus has maintained intensive partnerships with all major software companies in the data warehouse and business intelligence sector for many years. In addition, many of the consultants who work at saracus are also certified on the products of the software partners. To ensure that these partnerships do not cause saracus to lose its neutrality, we never operate as a reseller.

Why saracus consulting?

The following factors demonstrate why saracus is the consulting and integration partner for you:

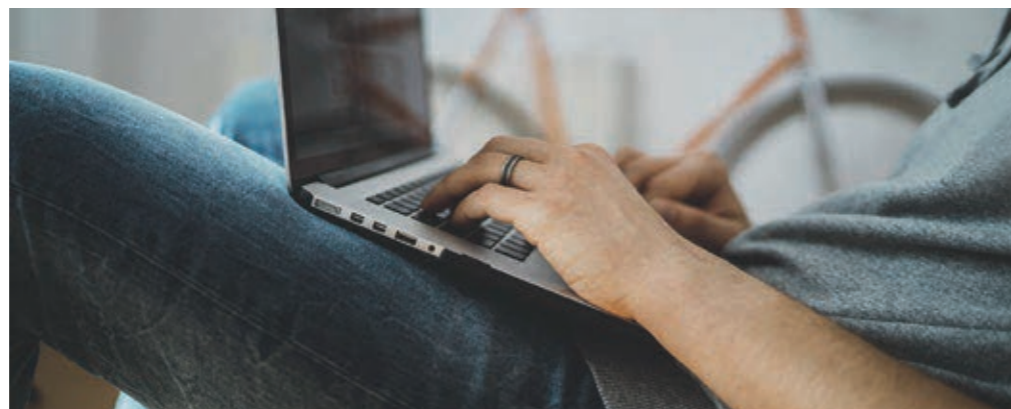
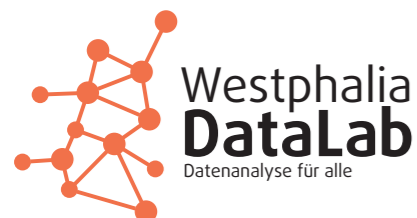
- Fully focused on Big Data, DWH, BI and aCRM for over 25 years
- In-depth experience with important technologies
- A combination of business and IT know-how
- A large number of trained and experienced consultants for on-time completion of major projects
- Full service – from analysis and concept development to system integration and operation
- A procedural methodology specific to DWH
- Total commitment to the success of the project

JOB OPPORTUNITIES

For students: Diploma/Bachelor theses, internships

For graduates: (Junior) Consultants

Please visit our website for further information: www.saracus.com



ABOUT THE COMPANY

Striving to be the most innovative DataLab in Europe, the Westphalia DataLab delivers Data Analytics as a Service (DAaaS) – ranging from self-service to full service – to customers worldwide. We strongly believe that companies, no matter the size, can leverage a massive hidden data potential by using AI and Machine Learning technology.

Founded in Münster in September 2017, we provide state-of-the-art Data Analytics to SMEs that often lack the capabilities, resources and tech experts in-house, and thus assist in transforming traditional business models to become data-driven.

If companies strive for the merits they need to trust in these rule-breaking data-driven developments. The logic consequence is that they must trust in tech start-ups and must cooperate to get access to those accelerating tech insights. In order to fully unfold a new era of data-driven business models, companies will have to participate in this obvious market development.

Tech start-ups arose because the spirit of the leading tech experts didn't fit into traditional company structures. They run on their own mantra: faster, no fear of failing and a strong bias towards action. There is no other place where prototyping, sprints and iterations are as normal as in tech startups like the Westphalia DataLab.

We believe that together, traditional companies and tech start-ups, combine a tremendous business power and make an un-

beatable team, if they collaborate on eye level. At the Westphalia DataLab we rely on over 25 years of experience in advanced statistics, a team of 40+ experienced data professionals and a strong collaboration with academia.

Our team of data scientists has carried out numerous projects and supported companies from various industries in exploiting their hidden potentials by using company data as well as terabyte of external data. Our standardized models and our expertise in artificial intelligence enable us to generate added value.

Paired with the strength and trustworthiness of our joint-venture partner FIEGE, pioneer of contract logistics and in existence for 145 years, we empower our customers to exploit their full data potential – 10 times faster and 10 times less expensive.

FACTS

- 40+ Data Scientists
- 25+ Clients
- 100+ Projects
- 800+ Billion rows in largest data record

TOPICS OF INTEREST

- Data Analytics as a Service
- Data Analytics as a Self Service
- Predictive Analytics
- Software Development
- Machine Learning
- Automated Analytics
- Big Data
- Data Security

JOB OPPORTUNITIES

Fancy some data? Then join us and become part of our rapidly growing start-up! Use the unique opportunity to actively participate in the design and development of a young company!

We are Westphalia DataLab, a Münster-based startup founded in 2017. Our mission is to make small and medium-sized businesses more data-driven with the help of machine learning. To this end, we develop automated analytics products that are integrated into our customers' operational processes. Our agile project teams support our customers from an innovative proof-of-concept to the productive use of our data analytics software.

- Data Scientist
- Data Scientist (Internship)
- Back-End Developer
- Back-End Developer (Internship)
- Front-End-Developer
- Front-End Developer (Internship)
- Web-Designer (Internship)



COMPANY PROFILE – ABOUT THE COMPANY

zeb is the number one strategy and management consultancy for financial services in Europe. With more than 1.000 employees, we develop sustainable strategies and implement them together with our clients—banks, savings banks, insurance companies and other financial institutions—along the entire value chain. Be it in Münster, Milan or Moscow—we, the management consultancy zeb, use the same language all over the world: straight talk. An honest working environment, reliable statements and open communication are part of our corporate culture and form the basis that enables us to achieve long-term success—for us and our clients.

PRODUCTS AND SERVICES –

TOPICS OF INTEREST

As a partner for change, it is our aim to improve the performance and competitive strength of our clients. The success of our consulting services is based on well-founded methodology, combined with in-depth expertise and excellent knowledge of the sector. The focus of our work lies in strategy & organization, finance & risk and IT. We intend to continue our growth path in the future. Our thematic growth focus is on management and IT consulting.

ADDITIONAL INFORMATION

ABOUT THE COMPANY

Collaborative

What you can expect at one of the most successful management consultancies in the demanding financial services market? Respect, trust, team spirit and a down-to-earth attitude. Because at zeb, we firmly



believe that only a culture of collaborating as partners can ensure our success and the success of our clients in the long run. Therefore, flat hierarchies and communication at eye level are very important to us—amongst colleagues, but also in the interaction with our clients.

Diversity

For us, all employees are equal—in terms of opportunities and career development. When it comes to national origin, gender, skin color or sexual orientation, however, we welcome diversity, because at zeb, we care for an open culture where employees are treated solely according to their professional skills. Therefore, zeb promotes international and intercultural cooperation: client projects are deliberately staffed with employees who have different geographic,

cultural and linguistic backgrounds, in order to encourage them to learn from each other and grow together as a team.

JOB OPPORTUNITIES

Required specializations:

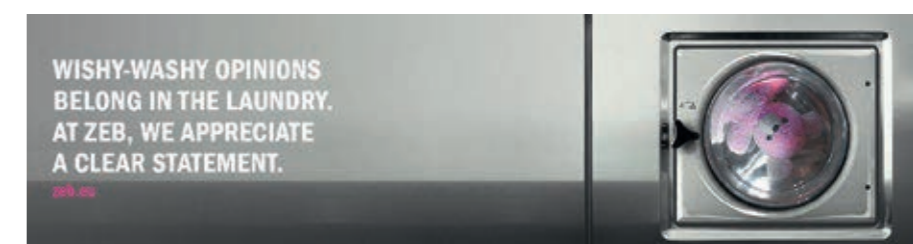
business administration; economics, (business) informatics, (business) mathematics, applied physics

Possibilities to join the company:

- Internship
- Student assistant
- Theses and dissertations
- zeb.bachelor.welcome
- Direct start

www.zeb.eu/career

www.zeb.de/karriere





IQ-OPTIMIZE

The IQ-optimize Software AG is a provider of modern, innovative software technology and offers its customers reliable and customer-oriented IT services. Since 1996 IQ-optimize develops customized applications and advanced software products. The IQ-optimize Software AG is a subsidiary of 1&1 Drillisch AG. 1&1 Drillisch AG is a listed public limited company and offers telecommunications services. The portfolio of the IQ-optimize Software AG is broad. The priorities are customer oriented and serve all needs of costumers.

Main competences of IQ-optimize

Software AG are:

- Software development, operation and maintenance of workflow and document management systems for business processes automation, billing and mediation, ERP and retail for web shops, stores and indirect sales including sales of subsidized goods.
- Media design for trendsetting websites.
- Implementation, hosting and operation of customized IT infrastructures and cloud solutions including service management, maintenance, security and monitoring.
- IQ Optimize is Advisory Board Member since 2004.

RESEARCH TOPICS

Optimization; Innovation; Omnichannel; Telecommunication; Workflow Management; CRM; Web Sales; Retail; Business Intelligence; Service Management and Security; Hosting and Cloud Solution

JOB OPPORTUNITIES

We are offering various job opportunities within our Software Developing, Billing, Operation, Business Intelligence and Project Management Units. Additionally to these areas we are offering job opportunities within our Cloud Technology area based on OpenStack. Please refer to

<https://www.iq-optimize.de/job>

for further details.

<http://www.iq-optimize.de>



SAP

We help the world run better and improve people's lives.

As the cloud company powered by SAP HANA®, SAP is market leader in enterprise application software, helping companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop or mobile device to the cloud – SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable more than 335,000 customers to operate profitably, adapt continuously, and grow sustainably. SAP helps simplify technology for companies of all sizes so they can consume our software the way they want – and without disruption. With an extensive global network of customers, partners, employees, and thought leaders around the world, SAP helps the world run better and improve people's lives.

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OUTLOOK FOR 2019

FEBRUARY 2019

START EXECUTIVE CERTIFICATE IN BUSINESS PROCESS MANAGEMENT, www.bpm-executive.com

START HILTI FELLOWSHIP PROGRAM (SUMMER TERM), Vaduz, Lichtenstein, www.uni.li/hilti-fellowship

8TH LICHTENSTEIN WINTER SCHOOL ON BPM AND DATA SCIENCE, 19–22 February, Vaduz, Liechtenstein, www.winterschool.li

14TH WI 2019, 24–27 February, Siegen, Germany, www.wi2019.de

APRIL 2019

11TH ASIAN CONFERENCE ON INTELLIGENT INFORMATION AND DATABASE SYSTEMS (ACIIDS 2019), 8–11 April, Yogyakarta, Indonesia, <https://aciids.pwr.edu.pl/2019/>

JUNE 2019

27TH EUROPEAN CONFERENCE ON INFORMATION SYSTEMS (ECIS), 8–14 June, Stockholm and Uppsala, Sweden, ecis2019.eu

ERCIS PHD SAILING SEMINAR, 22–29 June, Pto. Pollensa, Spain

SEPTEMBER 2019

10TH ERCIS ANNUAL WORKSHOP, 16–18 September, Loughborough University, United Kingdom

11TH INTERNATIONAL CONFERENCE ON COMPUTATIONAL COLLECTIVE INTELLIGENCE (ICCCI 2019), 4–6 September, University of Pau and Adour Countries, France, <http://iccci.sigappfr.org/>

EURO HOPE MINI-CONFERENCE, University of Agder, Norway, <https://www.euro-online.org/web/ewg/39/ewg-hope-euro-working-group-on-humanitarian-operations>

17TH BPM CONFERENCE, 25–26 September, London, United Kingdom, <https://waset.org/conference/2019/09/london/icbpm>

START HILTI FELLOWSHIP PROGRAM (WINTER TERM), Vaduz, Lichtenstein, www.uni.li/hilti-fellowship

OCTOBER 2019

CAPSI2019 – CONFERENCE OF THE PORTUGUESE ASSOCIATION FOR INFORMATION SYSTEMS, Lisbon, Portugal, <http://capsi2019.apsi.pt/index.php/en/>

4TH INTERNATIONAL JOINT CONFERENCE ON ELECTRONIC VOTING, 1–4 October, Bregenz, Austria, e-vote-id.org

25TH INTERNATIONAL CONFERENCE ON INFORMATION AND SOFTWARE TECHNOLOGIES (ICIST 2019), 10–12 October, Vilnius, Lithuania, <http://icist.if.ktu.lt>

16TH EDITION OF THE ITAIS CONFERENCE IN ITALY

NOVEMBER 2019

CENTRIS 2019 – CONFERENCE ON ENTERPRISE INFORMATION SYSTEMS, Lisbon, Portugal, <http://centeris.scika.org>

PROJMAN 2019 – PROJMAN – INTERNATIONAL CONFERENCE ON PROJECT MANAGEMENT, Lisbon, Portugal, <http://projman.scika.org/>

DECEMBER 2019

40TH ICIS, 15–18 December, Munich, Germany

ERCIS TEAM

ERCIS Team www.ercis.org



For everything that concerns the ERCIS network simply write us an email. You will for sure get an answer from one of our team members. The team consists of Dr. Armin Stein, who is the managing director of the ERCIS network and is being supported by Dr. Katrin Bergener, who works part-time for the team and furthermore as Coordinator for the WWU Centre for Europe, and Miriam Epke.

Besides answering emails, the team helps organising events, maintains the website, organises the network communication, and supports project applications.

If you are interested in the network, get in touch with them!

info@ercis.org

THE IS RESEARCH NETWORK – LET’S STAY IN TOUCH



IMPRINT

PUBLISHER ERCIS – EUROPEAN RESEARCH CENTER FOR INFORMATION SYSTEMS
UNIVERSITY OF MÜNSTER

EDITING DR. KATRIN BERGENER, MIRIAM EPKE, DR. ARMIN STEIN

LAYOUT LIVING CONCEPT WERBEAGENTUR GMBH MÜNSTER 2018

ACADEMIC DIRECTOR PROF. DR. DR. H.C. DR. H.C. JÖRG BECKER, PROFESSOR H.C. (NRU-HSE, MOSCOW)

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