



# Smart Digital Futures 2020

AMSTA | HCIS | IDT | InMed | SEEL | STS

## Conference Programme

**17-19 June 2020**

KES Virtual Conference Centre



# Contents

Chairs' Welcome .....	1
SDF-20 Organisation .....	3
AMSTA-20 .....	4
Organisation.....	4
International Programme Committee .....	5
HCIS-20.....	7
Organisation.....	7
International Programme Committee .....	8
IDT-20.....	11
Organisation.....	11
International Programme Committee .....	12
InMed-20.....	16
Organisation.....	16
International Programme Committee .....	17
SEEL-20.....	19
Organisation.....	19
International Programme Committee .....	20
STS-20.....	22
Organisation.....	22
International Programme Committee .....	23
Keynote Talks .....	24
Intelligent Biometric Multi-Modal Systems for Smart Societies .....	24
Statistical Data Science at A Crossroads .....	26
The Future of Human-Machine Systems: Human-Like AI and Human-Centred Robotics.....	28
Transition to Electrical and Autonomous Vehicles for Green Transportation .....	29
Schedule – Wednesday 17 June.....	31
Schedule – Thursday 18 June.....	33
Schedule – Friday 19 June.....	35
AMSTA Paper Presentations .....	37
AMSTA-01: Software Agents in Smart Environment .....	37
AMSTA-02: Intelligent Agents and Cloud Computing .....	38
AMSTA-03: Business Informatics .....	39

AMSTA-04: Agents and Multi-agents Systems applied to Well-being and Health .....	40
AMSTA-05: Business Process Management .....	41
AMSTA-06: Agent-based Modeling and Simulation .....	42
IDT Paper Presentations .....	43
IDT-01: General Track - Part 1 .....	43
IDT-02: General Track - Part 2 .....	44
IDT-03: Multi-Criteria Decision-Analysis – Theory and Their Applications (IS01) .....	45
IDT-04: Intelligent Data Processing and its Applications - Part 1 .....	46
IDT-05: Intelligent Data Processing and its Applications - Part 2 .....	47
IDT-06: High-Dimensional Data Analysis and Its Applications .....	48
IDT-07: Decision Making Theory for Economics .....	49
IDT-08: Large-Scale Systems for Intelligent Decision Making and Knowledge Engineering .....	50
IDT-09: Decision Technologies and Related Topics in Big Data Analysis of Social and Financial Issues .....	51
HCIS Paper Presentations .....	52
HCIS-01: General Track 1 .....	52
HCIS-02: General Track 2 .....	53
HCIS-03: Innovative Information Services for Advanced Knowledge Activity .....	54
HCIS-04: Technologies to Improve Senior Care .....	55
HCIS-05: Real-time Data Processing in Industrial and IoT Applications .....	56
HCIS-06: Digital Enterprise Architecture for Manufacturing Industry Financial Industry and others .....	57
InMed Paper Presentations .....	58
InMed-01: Advanced ICT for medical and Healthcare (1) .....	58
InMed-02: Biomedical Engineering, Trends, Research and Technologies .....	59
InMed-03: Advanced ICT for medical and Healthcare (2) .....	60
InMed-04: Support System for Medicine and Healthcare .....	61
SEEL Paper Presentations .....	62
SEEL-01: Smart Education .....	62
SEEL-02: Smart e-Learning .....	63
SEEL-03: Smart Pedagogy .....	64
SEEL-04: Smart Education: Case Studies and Research .....	65
SEEL-05: Smart Education: Systems and Technology .....	66
SEEL-06: Special Session IS01: Smart University Development: Organizational and Managerial Issues .....	67

SEEL-07: Special Session IS03: Mathematical Models in Smart Education and e-Learning .....	69
SEEL-08: Special Session IS04: Models of Professional Practice in Higher Education .....	70
SEEL-09: Special Session IS02: Smart Education, Smart Universities and their Impact on Students with Disabilities.....	71
STS Paper Presentations .....	72
STS-01: Multi-modal transport .....	72
STS-02: Traffic flow theory.....	73
STS-03: Traffic Engineering .....	74



## Chairs' Welcome

Welcome to the Smart Digital Futures 2020 (SDF-20) multi-theme conference, held in virtual form on the KES-online virtual conference platform, 17-20 June 2020.

This is the first time that Smart Digital Futures has been held virtually, and this has been made necessary because of the Covid-19 pandemic which has swept the world. Covid-19 has caused disruption, economic problems, and human tragedy in many countries. We offer condolences and sympathy to those who have sadly lost loved ones or colleagues in the pandemic.

SDF-20 is an amalgamation of six KES conferences: Agent and Multi-Agent Systems - Technology and Applications (KES-AMSTA-20), Intelligent Decision Technologies (KES-IDT-20), Human Centred Intelligent Systems (KES-HCIS-20), Innovation in Medicine and Healthcare (KES-InMed-20), Smart Education and e-Learning (KES-SEEL-20) and Smart Transportation Systems (KES-STS-20).

Although the conferences share a common forum, each one has its own Chair and International Programme Committee. The best papers submitted to the conference were presented and published in several volumes of proceedings in the Smart Innovation Systems and Technology series by Springer-Verlag. Delegates registered for SDF-20 may view sessions from any of the conferences and mix with the communities of the others through the online lounge.

Smart Digital Futures was organised as part of the KES International conference portfolio. For over a decade the mission of KES International has been to provide a professional community, networking and publication opportunities for all those who work in knowledge-intensive subjects. At KES we are passionate about the dissemination, transfer, sharing and brokerage of knowledge. The KES community consists of several thousand experts, scientists, academics, engineers, students and practitioners who participate in KES activities. KES runs conferences in different countries of the world on leading edge topics including Intelligent Systems, Sustainability in Energy and Buildings, Innovation, Knowledge Transfer and Enterprise, and Digital Media. KES provides routes to publication, such as journals, book series, and online publications, both through its own media and in conjunction with major publishers. KES also provides knowledge transfer services and consultancy.

The aim of Smart Digital Futures was to bring together researchers working at the leading edge of developments in smart systems and intelligent technology theory and applications. This programme contains 208 papers, each selected after full peer review by members of the International Programme Committees of the conferences.

We thank the keynote speakers for providing informative accounts of the latest research in their areas:

Prof Mika Sato-Ilic, University of Tsukuba, Japan (title of talk ‘Statistical Data Science at A Crossroads’);

Prof Rossi Setchi, Cardiff University, UK (title of talk ‘The Future of Human-Machine Systems: Human-Like AI and Human-Centred Robotics’);

Dr Milan Simic, RMIT University, Australia (title of talk ‘Transition to Electrical and Autonomous Vehicles for Green Transportation’);

and Prof Marina Gavrilova, University of Calgary, Canada (title of talk ‘Intelligent Biometric Multi-Modal Systems for Smart Societies’);

We thank the General Chairs and Programme Chairs of the SDF-20 conferences for their hard work and dedication. We appreciate the efforts of those organising and chairing special sessions, members of the International Programme Committees and reviewers and we thank them. We are grateful to authors for the papers they have contributed to the conference, and to delegates for their attendance and we give them our thanks.

Finally, we thank the conference administration for their organisational efforts.

Although KES members cannot meet in person on this occasion because of Covid-19, we remain confident that the KES community will rise above these difficult times, and we look forward to seeing you at future KES events.

We hope you find the conference useful and informative and we wish you all well.

**R.J. Howlett and L.C. Jain**  
**Smart Digital Futures Conference Series Chairs**



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Assoc. Prof. Zhongkui Wang	Ritsumeikan University, Japan
Prof. Junzo Watada	Waseda University, Japan
Prof. Yoshiyuki Yabuuchi	Shimonoseki City University, Japan
Prof. Shuichiro Yamamoto	Nagoya University, Japan
Prof. Hiro Yoshida	Harvard Medical School, USA

## SEEL-20

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Assoc. Prof. Svetlana A. Gudkova	Togliatti State University, Russia
Prof. Vladimir I. Serdyukov	Bauman Moscow State Technical University, Russia
Assoc. Prof. Vladimir N. Zhukov	Plekhanov Russian University of Economics, Russia
Prof. Alexander D. Nemtsev	Volzhsky University, Russia
Dr. Valery M. Kaziev	Kabardino-Balkar State University, Russia
Prof. Natalya O. Mikhalenok	Samara State University of Railways, Russia
Assoc. Prof. Yana S. Mitrofanova	Togliatti State University, Russia
Prof. Dmitry L. Savenkov	Togliatti State University, Russia

## STS-20

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Assoc. Prof. Tingsong Wang	Wuhan University, China
Assoc. Prof. Zhigang Xu	Chang'an University, China
Assoc. Prof. Yadan Yan	Zhengzhou University, China
Mr Ying Yang	Australian Catholic University, Australia
Dr. Barbara Yen	Griffith University, Australia
Dr. Zuduo Zheng	Queensland University of Technology, Australia
Dr. Changfu Zou	Chalmers University of Technology, Sweden

## Keynote Talks

**Prof Marina Gavrilova**

University of Calgary, Canada

### *Intelligent Biometric Multi-Modal Systems for Smart Societies*

**Abstract:** The area of biometric, without a doubt, have advanced to the forefront of an international effort to secure societies from both physical and cyber threats. This keynote provides an overview of the state-of-the-art in multi-modal data fusion and biometric system design, and links those advancements with real-world applications for smart and secure societies.

The rapid development of massive databases and image processing techniques has led over the past decade to the significant advancements in both fundamental biometric research and in a relevant commercial product development. Aside from cybersecurity, typical biometric applications include banking, border control, law enforcement, medicine, e-commerce, smart sensors and consumer electronics. A variety of issues related to biometric system performance and analysis has been addressed previously. A high number of biometric samples, data variability, data quality, data acquisition, types of fusion and system architectures have been shown to affect an individual biometric system's performance. Addition of new types of behavioral data, based on social interactions, presents unique challenges and opportunities. This keynote reviews current trends related to information fusion in multimodal biometric systems, considers issues of security and privacy of person data, and provides practical examples on the use of multi-modal biometrics in forensic examinations, border control, smart building design, medicine and situation awareness systems.



**Biography:** Marina L. Gavrilova is a Full Professor in the Department of Computer Science, University of Calgary, a head of the Biometric Technologies Laboratory and a Board Member of ISPIA. Her publications include over 200 journal and conference papers, edited special issues, books and book chapters in the areas of image processing, pattern recognition, machine learning, biometric and online security. She has founded ICCSA - an international conference series with LNCS/IEEE, co-chaired a number of top international

conferences, and is Founding Editor-in-Chief of LNCS Transactions on Computational Science Journal. Dr. Gavrilova is on the Editorial Boards of the Visual Computer, International Journal of Biometrics, and six other journals. She has given over 50 keynotes, invited lectures and tutorials at major scientific gatherings and industry

research centers, including at Stanford University, SERIAS Center at Purdue, Microsoft Research USA, Oxford University UK, Samsung Research South Korea and others.

**Prof Mika Sato-Ilic**

University of Tsukuba, Japan

***Statistical Data Science at A Crossroads***

**Abstract:** Statistics has been at the core of the effort to deal with diverse types of data. Recently this effort has reached a crossroads because today's extensive and complex societal data requires adaptable methods to satisfy the rapidly evolving demands of data structures in many fields. The tasks now are discovering new knowledge, making critical decisions, and predicting the future across many application domains, including biology, education, political science, and physical sciences. Such data-driven activities that integrate statistics into other fields are called "data science." Then, with the flourishing of Machine Learning (ML), emerged an emphasis on classification, prediction, computational efficiency, and intelligence augmentation (IA).

Statistical data analysis has served as the principal pipeline in dealing with many types of data and served as the theoretical foundation for an extensive range of data analysis. However, conventional data analysis dependent on statistical methods is not always adequate to treat the complex data types that make up this data. Soft computing has a key framework to tolerate imprecise and uncertain problems with a robust and computational optimal low-cost solution. This opens the door to a new paradigm based statistical multivariate analysis called soft data analysis capable of solving these statistical challenges. In soft data analysis, in which conventional statistical methods and ML or data mining methods are combined, we developed models that exploit the latent scale captured by soft computing techniques to explain data. While the original scale does not have the capacity to act as the scale for complex data, a scale extracted from the data itself can deal with this data.

This presentation focuses on challenging issues of statistical data analysis generated by the current vast and complex data: how we redefine and rethink various discrepancy engaging with important data-driven challenges in different application domains with the general problems of conventional statistical data analysis, how our soft computing based latent-scaled models are related to these issues, and how the models solve the problems with some applications.



**Biography:** Prof. Mika Sato-Ilic holds the position of Professor in the Faculty of Engineering, Information and Systems, at the University of Tsukuba. She also occupies the position of Vice President in the National Statistics Center, Japan, and serves as a member of a committee in the Financial Services Agency in Japan. She is the founding Editor-in-Chief of the International Journal of Knowledge Engineering and Soft Data Paradigms, Associate Editors of IEEE Transactions on Fuzzy Systems,

Neurocomputing, Information Sciences, and Regional Editor of International Journal on Intelligent Decision Technologies, as well as serving on the editorial board of several other journals. In addition, she was a Council of the International Association for Statistical Computing (a section of the International Statistical Institute), a Senior Member of the IEEE where she held several positions, including the Vice-Chair of the Fuzzy Systems Technical Committee of the IEEE Computational Intelligence Society. Also, she has worked on several IEEE committees, including the administration committee, program co-chair, and special sessions co-chair. Her academic output includes 4 books, 14 book chapters, and over 140 journal and conference papers. Her research interests include the development of methods for data mining, multi-dimensional data analysis, multi-mode multi-way data theory, pattern classification, and computational intelligence techniques for which she has received several academic awards.

**Prof Rossi Setchi**

Cardiff University, UK

***The Future of Human-Machine Systems: Human-Like AI and Human-Centred Robotics***

**Abstract:** Professor Setchi will focus her talk on the main principles of human-like computing and human-centred robotics that will provide machines and robots with human-like perceptual, reasoning and learning abilities, and enable safe and intuitive interactions and co-existence of man and machines. The main research challenge is the need for more acceptable, understandable and explainable AI and robotic solutions. Professor Setchi will discuss the limitations of the current AI and statistical Machine Learning and the need for more advanced human-like AI, which learns from humans using a small number of examples. She will explain how computational semantics and advances in smart sensing can be used to create human-like AI and improve productivity, creativity, situational awareness, intuitive interaction and reduce the likelihood of human confusion. She will illustrate her talk with examples from several multidisciplinary projects, which investigate real-world problems in the context of human-centred and context-aware computing.



**Biography:** Rossi Setchi is Professor in High-Value Manufacturing and Director of the Research Centre in AI, Robotics and Human-Machine Systems at Cardiff University, which is a collaboration of the Schools of Engineering, Psychology and Computer-Science and Informatics. She has a distinguished track record of research in a range of areas including AI, robotics, systems engineering, manufacturing, industrial sustainability, Cyber-Physical Systems and

Industry 4.0, and, in particular, has built an international reputation for excellence in knowledge-based systems, computational semantics and human-machine systems. Professor Setchi has published over 220 peer-reviewed, high-quality publications and has been able to secure external grant support totalling more than £22 million. She has collaborated with many universities, research organisations and industrial companies from more than 20 countries in Europe, Asia and Australia, and has provided research leadership on over 30 collaborative projects. She is member of IFIP Technical Committee on Computer Aided Innovation (WG5.4), IFAC Technical Committee on Human-Machine Systems (WG4.5) and IEEE Task Force on Human-like Intelligence of the IEEE Computational Intelligence Society. She is Associate Editor and member of the Editorial Board of several international journals, and is Fellow of three professional institutions.

**Dr Milan Simic**

RMIT University, Australia

***Transition to Electrical and Autonomous Vehicles for Green Transportation***

**Abstract:** Many countries and continents are facing significant environmental and economic impacts from the global climate change. At the same time, we have knowledge, technology, finance and community awareness that something should be done. Reducing global warming by the introduction of new, clean technologies, better traffic management and better ITS systems we could give our contribution to the important issue of environment protection.

Continuous innovations in automotive industry, associated with rapid communications and computer science developments, offer safer and sustainable transport solutions. Industry, and the whole society, is now facing significant changes and transitions, created by the introduction of various, hybrid powered and electrical vehicles (EV). We are shifting from the use of fossil fuel powered internal combustion engines (ICE) to clean electrical motors. By cutting all sorts of pollutions and CO2 emissions, new technology is sustainable and environment friendly.

At the same time, we have introduction of the higher level of cars' autonomy, up to the fully autonomous vehicles (AV). As in the other transition, from ICE to EV, this transition face obstacles, like cost of the new technologies, that also includes necessary infrastructure changes. In addition to all, we need new, proper, government regulations. Autonomous vehicles should provide significant social and community benefits by improving safety on the road, saving lives, reducing fuel consumption, congestion and pollution, while improving mobility. Keynote speak will present various aspects of all those changes. There are many research, economic, technological and management questions to be answered, that we are now working on, which will be highlighted in the presentation.



**Biography:** Dr Milan Simic has PhD, Master and Bachelor in Electronic Engineering, from the University of Nis, Serbia, as well as, Graduate Diploma in Education, from the RMIT University Melbourne, Australia. He has comprehensive experience from industry, working in Honeywell Information Systems, Research Institute and Academia, in Europe and Australia. He has few industry and academic awards for his research. Dr Milan Simic is currently with RMIT University, Melbourne, Australia, School of Engineering and he is, also:

- General Editor: KES Journal: <http://www.kesinternational.org/journal/>
- Professor: University Union Nikola Tesla, Belgrade, Serbia
- Adjunct Professor: KIIT University, Bhubaneswar, Odisha, India

- Associate Director: Australia-India Research Centre for Automation Software Engineering

Dr Simic has a multidisciplinary research, teaching and work expertise in the following areas: Mechatronics, Automotive Electronics, Biomedical Engineering, Robotics, Physical Networks, Information Coding, Green Energy and Autonomous Systems, as well as, in Engineering Management and in Education.

## Schedule – Wednesday 17 June

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	<b>Opening Ceremony</b> Prof Robert J Howlett & Prof Lakhmi Jain 8:30 - 8:45 GMT					
	<b>Keynote Speaker 1</b> <b>Prof Marina Gavrilova</b> University of Calgary, Canada Intelligent Biometric Multi-Modal Systems for Smart Societies 8:45 -9:45 GMT					
<b>Session Details</b>	<b>IDT-01</b> <b>General Track 1</b> Chair: Ireneusz Czarnowski	<b>HCIS-01</b> <b>General Track 1</b> Chair: Alfred Zimmermann		<b>InMed-01</b> <b>Advanced ICT for medical and Healthcare (1)</b> Chair: Yen-Wei Chen	<b>AMSTA-01</b> <b>Software Agents in Smart Environment</b> Chair: Prof. Mario Kusek	<b>STS-01</b> <b>Multi-modal transport</b> Chair: Ziling Zeng
<b>GMT Time</b>	10:00 - 12:00	10:00 - 12:00		10:00 - 12:00	10:00 - 12:00	10:00 - 12:00
	<b>Keynote Speaker 2</b> <b>Prof Rossi Setchi</b> Cardiff University, UK The Future of Human-Machine Systems: Human-Like AI and Human-Centred Robotics 12:45 -13:45 GMT					

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
Session Details	<b>IDT-02</b> <b>General Track 2</b> Chair: Ireneusz Czarnowski	<b>HCIS-02</b> <b>General Track 2</b> Chair: Alfred Zimmermann	<b>SEEL-01</b> <b>Smart Education</b> Co-chairs: Dr. Olivier Bonnaud and Dr. Vladimir Uskov	<b>InMed-02</b> <b>Biomedical Engineering, Trends, Research and Technologies</b> Chair: Yoshimasa Masuda	<b>AMSTA-02</b> <b>Intelligent Agents and Cloud Computing</b> Chair: Prof. Jessica Chen-Burger	<b>STS-02</b> <b>Traffic flow theory</b> Chair: Yang Yu
GMT Time	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00
			<b>SEEL-02</b> <b>Smart e-Learning</b> Co-chairs: Dr. Danguole Rutkaskeine and Dr. Blanka Klimova			
GMT Time			16:30 - 18:30			

## Schedule – Thursday 18 June

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
	<b>Keynote Speaker 3</b> <b>Dr Milan Simic</b> RMIT University, Australia Transition to Electrical and Autonomous Vehicles for Green Transportation 08:45 - 09:45 GMT					
<b>Session Details</b>	<b>IDT-03</b> <b>Multi-Criteria Decision-Analysis – Theory and Their Applications (IS01)</b> Chair: Wojciech Sařabun	<b>HCIS-03</b> <b>Innovative Information Services for Advanced Knowledge Activity</b> Chair: Koichi Asakura		<b>InMed-03</b> <b>Advanced ICT for medical and Healthcare (2)</b> Chair: Yen-Wei Chen	<b>AMSTA-03</b> <b>Business Informatics</b> Chair: Prof. Hiroshi Takahashi	<b>STS-03</b> <b>Traffic Engineering</b> Chair: Kun Gao
<b>GMT Time</b>	10:00 - 12:00	10:00 - 12:00		10:00 - 12:00	10:00 - 12:00	10:00 - 12:00
	<b>Keynote Speaker 4</b> <b>Prof Mika Sato-Ilic</b> University of Tsukuba, Japan Statistical Data Science at A Crossroads 12:45 - 13:45 GMT					

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
Session Details	<b>IDT-04</b> <b>Intelligent Data Processing and its Applications - Part 1</b> Chair.: Margarita N. Favorskaya	<b>HCIS-04</b> <b>Technologies to Improve Senior Care</b> Chair: Giovanni Luca Masala	<b>SEEL-03</b> <b>Smart Pedagogy</b> Co-chairs: Dr. Michele Cole and Dr. Louis Swartz	<b>InMed-04</b> <b>Support System for Medicine and Healthcare</b> Chair: Haruo Noma	<b>AMSTA-04</b> <b>Agents and Multi-agents Systems applied to Well-being and Health</b> Chair: Dr. Maria del Rosario Baltazar Flores	<b>SEEL-04</b> <b>Smart Education: Case Studies and Research</b> Co-chairs: Dr. Elvira Strakhovich and Dr. Seyeoung Chun
GMT Time	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00	14:00 - 16:00
Session Details			<b>SEEL-05</b> <b>Smart Education: Systems and Technology</b> Co-chairs: Dr. Marcel Pikhart and Dr. Vladimir Uskov			<b>SEEL-06</b> <b>Smart University Development: Organizational and Managerial Issues</b> Co-Chairs: Dr. Lyudmila V. Glukhova and Dr. Anna A. Sherstobitova
GMT Time			16:15 - 18:15			16:15 - 19:15

## Schedule – Friday 19 June

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
Session Details	<b>IDT-05 Intelligent Data Processing and its Applications - Part 2</b> Chair.: Margarita N. Favorskaya	<b>IDT-09 Decision Technologies and Related Topics in Big Data Analysis of Social and Financial Issues</b> Chair: Mieko Tanaka-Yamawaki	<b>SEEL-08 Models of Professional Practice in Higher Education</b> Co-Chairs: Dr. Djordje Nadrljanski and Dr. Mila Nadrljanski	<b>IDT-06 High-Dimensional Data Analysis and Its Applications</b> Chair: Mika Sato-Ilic	<b>IDT-07 Decision Making Theory for Economics</b> Chair: Takao Ohya	<b>SEEL-07 Mathematical Models in Smart Education and e-Learning</b> Co-Chairs: Dr. Natalia A. Serdyukova and Dr. Natalya V. Serdyukova
GMT Time	09:30 - 11:30	09:30 - 11:30	09:00-12:00	09:30 - 11:30	09:30 - 11:30	09:00-12:00

	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6
Session Details	<b>AMSTA-05</b> <b>Business Process Management</b> Chair: Dr. Mahdi Zargayouna	<b>HCIS-06</b> <b>Digital Enterprise Architecture for Manufacturing Industry Financial Industry and others</b> Chair: Yoshimasa Masuda	<b>HCIS-05</b> <b>Real-time Data Processing in Industrial and IoT Applications</b> Chair: Abdellah Chehri	<b>IDT-08</b> <b>Large-Scale Systems for Intelligent Decision Making and Knowledge Engineering</b> Chair: Sergey Zykov	<b>AMSTA-06</b> <b>Agent-based Modeling and Simulation</b> Chair: Prof. Roman Sperka	<b>SEEL-09</b> <b>Smart Education, Smart Universities and their Impact on Students with Disabilities</b> Chair: Dr. Jeffrey P. Bakken
GMT Time	13:00 - 15:00	13:00 - 15:00	13:00 - 15:00	13:00 - 15:00	13:00 - 15:00	14:00 - 15:00
	<b>Closing Ceremony</b> 15:45 GMT					

## AMSTA Paper Presentations

AMSTA-01

Wednesday 17 June, 10:00 - 12:00

Room 5

### ***AMSTA-01: Software Agents in Smart Environment***

Chair: Prof. Mario Kusek

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>ams20-006</b>	Revitalising and Validating the Novel Approach of xAOSF framework under Industry 4.0 in comparison with Linear SC Mr Fareed Ud Din, Dr. Frans Henskens, Dr. David Paul, Dr Joe Ryan, Dr Mark Wallis
<b>ams20-035</b>	Natural Language Agents in a Smart Environment Mr. Renato Soic, Mr. Marin Vukovic
<b>ams20-018</b>	Potentials of Digital Business Models for the European Agriculture Sector Prof. Dr. Ralf-christian Haerting, M. A. Frieder Horsch, M.sc. Raphael Kaim
<b>ams20-039</b>	Agent-Based Approach for User-Centric Smart Environments Mrs. Katarina Mandaric, Prof. Gordan Jezic, Dr. Pavle Skocir
<b>ams20-012</b>	Providing Efficient Redundancy to an Evacuation Support System Using Remote Procedure Calls Mr. Itsuki Tago, Dr. Yasushi Kambayashi, Mr. Kota Konishi, Dr. Munehiro Takimoto
<b>ams20-020</b>	Process Model for Accessible Website User Evaluation M.Sc. Matea Zilak, Prof. Zeljka Car, M.Sc. Ana Keselj, Ph.D. Ivana Rasan

AMSTA-02

Wednesday 17 June, 14:00 - 16:00

Room 5

***AMSTA-02: Intelligent Agents and Cloud Computing***

Chair: Prof. Jessica Chen-Burger

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>ams20-014</b>	A comparative study of trust and reputation models in mobile agent systems Student Donies Samet, Maître Assistant Farah Barika Ktata, Professor Khaled Ghedira
<b>ams20-029</b>	Agent-based control of service scheduling within the fog environment Mr Petar Krivic, Prof Mario Kusek, Mr Jakov Zivkovic
<b>ams20-016</b>	On the Conception of a Multi-Agent Analysis and Optimization Tool for Mechanical Engineering Parts Dr.-Ing. Paul Christoph Gembarski
<b>ams20-026</b>	Predicting dependency of approval rating change from Twitter activity and sentiment analysis Mr Demijan Grgic, Phd Marina Bagic; Babac, Mr Mislav Karaula, Phd Vedran Podobnik
<b>ams20-009</b>	About security control of dynamic systems Phd Radda Iureva, Bch Ilya Danenkov, Phd Artem Kremlev, Phd Alexey Margun
<b>ams20-001</b>	Artificial Intelligent Agent for Energy Savings in Cloud Computing Environment: Implementation and Performance Evaluation Professor Leila Ismail, Research Assistant Huned Materwala

AMSTA-03  
 Thursday 18 June, 10:00 - 12:00  
 Room 5

***AMSTA-03: Business Informatics***

Chair: Prof. Hiroshi Takahashi

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>ams20-037</b>	Construction of News Article Evaluation System Using Language Generation Model Mr. Yoshihiro Nishi, Ms. Aiko Suge, Prof. Hiroshi Takahashi
<b>ams20-038</b>	Constructing a valuation system through patent document analysis Mr Shohei Fujiwara, Mr Yusuke Matsumoto, Ms Aiko Suge, Prof Hiroshi Takahashi
<b>ams20-040</b>	Modeling of Bicycle Sharing Operation System with Dynamic Pricing by Agent Reinforcement Learning Mr. Kohei Yashima, Prof. Setsuya Kurahashi
<b>ams20-041</b>	Omni-Channel Challenges Facing Small- and Medium-Sized Enterprises: Balancing between B2B and B2C Prof. Yoko Ishino, Mr. Tomohiko Fujimura
<b>ams20-042</b>	A Formal, Descriptive Model for the Business Case of Managerial Decision-Making Dr. Masaaki Kunigami, Dr. Takamasa Kikuchi, Prof. Hiroshi Takahashi, Prof. Takao Terano

AMSTA-04

Thursday 18 June, 14:00 - 16:00

Room 5

**AMSTA-04: Agents and Multi-agents Systems applied to Well-being and Health**

Chair: Dr. Maria del Rosario Baltazar Flores

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>ams20-013</b>	Multiagent system as support for the diagnosis of language impairments using BCI-Neurofeedback: Preliminary Study Master Eugenio Salvador Martínez Velazquez, Phd Rosario Baltazar, Master Miguel Angel Casillas, Phd Carlos Garcia Reyes, Master Martha Rocha
<b>ams20-030</b>	Multi-Agent System for Therapy in Children With the Autistic Spectrum Disorder (ASD), Utilizing Smart Vision Techniques - SMA-TEAVI It Engineer Ruben Sepulveda Velarde, PhD Arnulfo Alanis, Master's degree Karina Alvarado, PhD Marina Alvelais Alarcón, Psychologist Daniel Velazquez
<b>ams20-031</b>	Multiagent Monitoring System for Oxygen Saturation and Heart Rate Eng Fabiola Hernandez-Leal, PhD Arnulfo Alanis, MD Efrain Patiño
<b>ams20-033</b>	Multi-Agent System for Obtaining Parameters in Concussions-MAS-OpC Computer Engineering Gustavo Ramirez Gonzalez, PhD. Of Philosophy Arnulfo Alanis Garza, PhD. Neurosciences Marina Alvelais Alarcón, PhD. Computing Bogart Y. Marquez L., Educational Psycho. Daniel Velazquez-Velazquez
<b>ams20-034</b>	Data analysis of sensors in smart homes for applications healthcare in elderly people Uriel Saul Huerta Campos, Phd Maria Del Rosario Baltazar Flores, Msc Miguel Angel Casillas Araiza, Phd Anabel Pineda Briseño, Msc Martha Alicia Rocha Sánchez
<b>ams20-036</b>	A Genetic Algorithm-oriented Model of Agent Persuasion for Multi-agent System Negotiation Dr. Samantha Jiménez, Dr. Arnulfo Alanis, Dr. Jose Luis Álvarez-Flores, Dr. Víctor H. Castillo, Dr. Bogart Yail Márquez, Dr. Leonel Soriano-Equigua

AMSTA-05  
 Friday 19 June, 13:00 – 15:00  
 Room 1

***AMSTA-05: Business Process Management***

Chair: Dr. Mahdi Zargayouna

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>ams20-015</b>	Impacts of the implementation of the General Data Protection Regulations (GDPR) in SME business models - An empirical study with a quantitative design Prof. Dr. Ralf-Christian Haerting, M. A., B.Sc. Raphael Kaim, B. A. Dennis Ruch
<b>ams20-027</b>	A Study on the Influence of Advances in Communication Technology on the Intentions of Urban Park Users. Doctoral Student Noriyuki Sugahara, Associate Professor Masakazu Takahashi
<b>ams20-003</b>	Modelling timings of the company's response to specific customer requirements Associate Professor Petr Suchánek, Dr., Ing. Robert Bucki
<b>ams20-010</b>	Importance of process flow and logic criteria for RPA implementation Ing. Et Ing. Michal Halaska, Assoc. Prof. Roman Sperka
<b>ams20-025</b>	Real-Time Autonomous Taxi Service: An Agent Based Simulation Mrs Negin Alisoltani, Professor Ludovic Leclercq, Dr Mahdi Zargayouna

AMSTA-06

Friday 19 June, 13:00 - 15:00

Room 5

***AMSTA-06: Agent-based Modeling and Simulation***

Chair: Prof. Roman Sperka

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>ams20-008</b>	Software development for the implementation of Smart-technology and for the creation of an intelligent prediction and control system based on artificial immune systems and the multi-agent platform JADE Dr. Galina Samigulina, Dr. Zarina Samigulina
<b>ams20-017</b>	A Multi-Agent Framework for Visitor Tracking in Open Cultural Places Mr. Thaer Thaher, Mr. Amjad Rattrout, Mr. Muath Sabha, Mr. Muhammed Safarini, Mrs. Rasha Safarini
<b>ams20-021</b>	Towards modeling based on agents that support in increasing the competitiveness of the professional of the Degree in Computer Science. Dr. Consuelo Salgado-soto, Dr. Esperanza Manrique, Dr. Hilda Beatriz Ramirez, Dr. Margarita Ramirez-ramirez
<b>ams20-022</b>	Human Tracking in Cultural Places using Multi-Agent Systems and Face Recognition Mr Aktham Sawan, Mr Adel Hassan, Mr Amjad Rattrout, Mr Muath Sabha
<b>ams20-024</b>	A conceptual framework for agent-based modelling of human behaviour in spatial design Mr. Dario Esposito, Ms. Ilenia Abbattista, Mr. Domenico Camarda

## IDT Paper Presentations

IDT-01

Wednesday 17 June, 10:00 – 12:00

Room 1

### ***IDT-01: General Track - Part 1***

Chair: Ireneusz Czarnowski

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-002</b>	Solving Job Shop Scheduling with Parallel Population-Based Optimization and Apache Spark Ms Izabela Wierzbowska, Prof. Piotr Jedrzejowicz
<b>idt20-005</b>	Predicting Profitability of Peer-to-Peer Loans with Recovery Models for Censored Data Mr Markus Viljanen, Mr Ajay Byanjankar, Prof Tapio Pahikkala
<b>idt20-008</b>	Weighted Network Analysis for Computer-Aided Drug Discovery Dr Mariko Ito, Prof Takaaki Ohnishi
<b>idt20-013</b>	Manufacturing as a Service in Industry 4.0: A Multi-Objective Optimization Approach Mr Gabriel Medeiros, Mr Qiushi Cao, Ass. Prof. Ahmed Samet, Prof. Cecilia Zanni-merk
<b>idt20-025</b>	Conservative Determinization of Translated Automata by Embedded Subset Construction Mr Michele Dusi, Prof. Gianfranco Lamperti

IDT-02

Wednesday 17 June, 14:00 – 16:00

Room 1

***IDT-02: General Track - Part 2***

Chair: Ireneusz Czarnowski

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-026</b>	Explanatory Monitoring of Discrete-Event Systems Prof. Gianfranco Lamperti, Mr Nicola Bertoglio, Prof. Marina Zanella, Prof. Xiangfu Zhao
<b>idt20-027</b>	Artificial Intelligence Technique in Crop Disease Forecasting: a Case Study on Potato Late Blight Prediction Prof Gianni Fenu, Dr Francesca Mallocci
<b>idt20-030</b>	Optimal Quality-based Recycling and Reselling Prices of Returned SEPs in IoT Environment Ph.d Candidate Siyu Zong, Associate Professor Sijie Li, Ph.d Candidate You Shang
<b>idt20-032</b>	On a Novel Representation of Multiple Textual Documents in a Single Graph Prof. Nikos Karacapilidis, Mr. Nikolaos Giarelis, Mr. Nikos Kanakaris
<b>idt20-058</b>	A Multi-Agent Approach to the DVRP with GLS Improvement Procedure Prof. Dariusz Barbucha

IDT-03

Thursday 18 June, 10:00 – 12:00

Room 1

***IDT-03: Multi-Criteria Decision-Analysis – Theory and Their Applications (IS01)***

Chair: Wojciech Sałabun

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-003</b>	Digital Twin Technology for Pipeline Inspection Phd Radda Iureva, Phd Yuri Andreev, Master Daria Kolesnikova, Phd Artem Kremlev, Master Vladislav Subbotin
<b>idt20-060</b>	Application of Hill Climbing Algorithm in Determining the Characteristic Objects Preferences Based on the Reference Set of Alternatives Mr. Jakub Wieckowski, Mr. Bartłomiej Kizielewicz, PhD Joanna Kolodziejczyk
<b>idt20-061</b>	The Search of the Optimal Preference Values of the Characteristic Objects by Using Particle Swarm Optimization in the Uncertain Environment Mr. Jakub Wieckowski, Mr. Bartłomiej Kizielewicz, PhD Joanna Kolodziejczyk
<b>idt20-062</b>	Finding an Approximate Global Optimum of Characteristic Objects Preferences by Using Simulated Annealing Mr. Jakub Wieckowski, Mr. Bartłomiej Kizielewicz, PhD Joanna Kolodziejczyk

IDT-04

Thursday 18 June, 14:00 – 16:00

Room 1

***IDT-04: Intelligent Data Processing and its Applications - Part 1***

Chairs: Margarita N. Favorskaya, Lakhmi C. Jain, Mikhail Sergeev

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-004</b>	Detecting Relevant Regions for Watermark Embedding in Video Sequences Based on Deep Learning Prof. Margarita Favorskaya, Dr. Vladimir Buryachenko
<b>idt20-007</b>	Artificial Neural Network in Predicting Cancer Based on Infra-Red Spectroscopy Mr. Yaniv Cohen, Dr. Ben Zion Dekel, Prof. Evgenii Krouk, Dr. Arkadi Zilberman
<b>idt20-011</b>	Evaluation of Shoulder Joint Data Obtained from CON-TREX Medical System Phd Mikhail Kurako, Dr. Evgeny Kabaev, Phd Alexander Matsulev, Dr. Konstantin Simonov, Dr. Aleksandr Zotin
<b>idt20-012</b>	Framework for Intelligent Wildlife Monitoring Dr. Valery Nicheporchuk, Prof. Margarita Favorskaya, Dr. Igor Gryazin
<b>idt20-015</b>	Computation the Bridges Earthquake Resistance by the Grid-Characteristic Method Dr Alena Favorskaya
<b>idt20-016</b>	Study the Elastic Waves Propagation in Multi-Storey Buildings, Taking into Account Dynamic Destruction Dr Alena Favorskaya, Dr Vasily Golubev

IDT-05

Friday 19 June, 9:30 – 11:30

Room 1

***IDT-05: Intelligent Data Processing and its Applications - Part 2***

Chairs: Margarita N. Favorskaya, Lakhmi C. Jain, Mikhail Sergeev

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-017</b>	Icebergs Explosions for Prevention of Offshore Collision: Computer Simulation and Analysis Dr Alena Favorskaya, Dr Nikolay Khokhlov
<b>idt20-029</b>	Genetic Operators Impact on Genetic Algorithms Based Variable Selection Dr Marco Vannucci, Dr Silvia Cateni, Dr Valentina Colla
<b>idt20-034</b>	Symmetry Indices as a Key to Finding Matrices of Cyclic Structure for Noise-Immune Coding Dr. Anton Vostrikov, Prof. Nikolaj Balonin, Dr. Alexander Sergeev, Prof. Mikhail Sergeev
<b>idt20-035</b>	Search and Modification of Code Sequences Based on Circulant Quasi-Orthogonal Matrices Dr. Anton Vostrikov, Dr. Vadim Nenashev, Dr. Alexander Sergeev, Prof. Mikhail Sergeev
<b>idt20-051</b>	Processing of CT Lung Images as a Part of Radiomics Phd Mikhail Kurako, Phd Yousif Hamad, Phd Anzhelika Kents, Dr Konstantin Simonov, Dr Aleksandr Zotin

IDT-06

Friday 19 June, 9:30 – 11:30

Room 4

***IDT-06: High-Dimensional Data Analysis and Its Applications***

Chair: Mika Sato-Ilic

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-001</b>	Symbolic Music Text Fingerprinting: Automatic Identification of Musical Scores Prof Michele Della Ventura
<b>idt20-014</b>	Optimization of Generalized Cp Criterion for Selecting Ridge Parameters in Generalized Ridge Regression Mr. Mineaki Ohishi, Prof. Hirofumi Wakaki, Prof. Hirokazu Yanagihara
<b>idt20-046</b>	A Fast Optimization Method for Additive Model via Partial Generalized Ridge Regression Dr Keisuke Fukui, Mr Mineaki Ohishi, Dr Mariko Yamamura, Prof Hirokazu Yanagihara
<b>idt20-048</b>	Improvement of the Training Dataset for Supervised Multiclass Classification Ms. Yukako Toko, Prof. Mika Sato-iloc
<b>idt20-052</b>	A Constrained Cluster Analysis with Homogeneity of External Criterion Dr. Masao Takahashi, Mr. Tomoo Asakawa, Prof. Dr. Mika Sato-iloc
<b>idt20-053</b>	Trust-Region Strategy with Cauchy Point for Nonnegative Tensor Factorization with Beta-divergence Dr. Rafal Zdunek, Mr. Krzysztof Fonal

IDT-07

Friday 19 June, 9:30 – 11:30

Room 5

***IDT-07: Decision Making Theory for Economics***

Chairs: Takao Ohya, Takafumi Mizuno

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-010</b>	History of Mechanization and Organizational Change in the Life Insurance Industry in Japan (Examples from Dai-ichi Life, Nippon Life, Imperial Life, Meiji Life) Ph.d Shunei Norikumo
<b>idt20-031</b>	A Diagram for Finding Nash Equilibria in Two-Players Strategic Form Games Dr Takafumi Mizuno
<b>idt20-033</b>	An AHP Approach for Transform Selection in DHCT-based Image Compression Mr Masaki Morita, Mr Yuto Kimura, Prof. Katsu Yamatani
<b>idt20-054</b>	SPCM with Improved Two Stage Method for MDAHP including Hierarchical Criteria. Prof. Takao Ohya
<b>idt20-059</b>	Tournament Method Using a Tree Structure to Resolve Budget Conflicts Dr. Natsumi Oyamaguchi, Dr. Isamu Okada, Dr. Hiroyuki Tajima
<b>idt20-028</b>	Upgrading the Megacity Piloting a Co-Design & Decision Support Environment for Urban Development in India Prof. Dr.-ing Joerg Noennig, Dipl.-ing. Konstantin Doll, Dipl.-ing. David Hick, Dipl.-psych. Torsten Holmer, B.s. Chiranjay Shah, Dipl.-ing. Sebastian Wiesenhuetter

IDT-08

Friday 19 June, 13:00 – 15:00

Room 4

***IDT-08: Large-Scale Systems for Intelligent Decision Making and Knowledge Engineering***

Chair: Sergey Zykov

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-022</b>	Digital Systems for eCTD Creation on the Pharmaceutical Market of the Eurasian Economic Union Assoc. Prof. Konstantin Koshechkin, Prof. Georgy Lebedev, Prof. Sergey Zykov
<b>idt20-023</b>	Scientific Approaches to the Digitalization of Drugs Assortment Monitoring Using Artificial Neural Networks Assoc. Prof. Konstantin Koshechkin, Prof. Georgiy Lebedev, Mr. Arsalan Tsyndymeyev
<b>idt20-024</b>	The Geographic Information System of the Russian Ministry of Health Dr Georgy Lebedev, Dr Nikita Golubev, Dr Yuriy Orlov, Dr Alexandr Policarpov, Mr Aleksey Serikov, Ms Elena Tyurina
<b>idt20-036</b>	Creation a Medical Decision Support System Using Evidence-Based Medicine Dr Georgy Lebedev, Mr Eduard Fartushniy, Mr Herman Klimenko, Dr Konstantin Koshechkin, Mr Pavel Kozhin, Dr Igor Shaderkin
<b>idt20-037</b>	Improve Statistical Reporting Forms in Research Institutions of the Health Ministry of Russia Dr Georgy Lebedev, Mr Eduard Fartushniy, Dr Oleg Krylov, Mr Andrey Lelyakov, Mr Yuriy Mironov, Mr Valeriy Tkachenko
<b>idt20-045</b>	Chat-based Approach Applied to Automatic Live-stream Highlight Generation Pavel Drankou, Professor Sergey Zykov

IDT-09

Friday 19 June, 9:30 – 11:30

Room 2

***IDT-09: Decision Technologies and Related Topics in Big Data Analysis of Social and Financial Issues***

Chair: Mieko Tanaka-Yamawaki

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<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>idt20-019</b>	What are the Differences between Good and Poor User Experience? Dr. Jun Iio
<b>idt20-043</b>	Two-component Opinion Dynamics Theory of Official Stance and Real Opinion Including Self-interaction Prof Akira Ishii, Dr Yuki Ohira, Ms Nozomi Okano
<b>idt20-047</b>	Theory of Opinion Distribution in Human Relations where Trust and Distrust Mixed Prof Akira Ishii, Dr. Yasuko Kawahata
<b>idt20-050</b>	Is the Statistical Property of the Arrowhead Price Fluctuation Time Dependent? Dr. Mieko Tanaka-Yamawaki, Prof. Masanori Yamanaka

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## HCIS Paper Presentations

HCIS-01

Wednesday 17 June, 10:00 – 12:00

Room 2

### ***HCIS-01: General Track 1***

Chairs: Alfred Zimmermann, Rainer Schmidt

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>hcis20-002</b>	Challenges of Adopting Human-Centered Intelligent Systems: An Organizational Learning Approach Dr Fons Wijnhoven
<b>hcis20-005</b>	Multi-level Evaluation of Smart City Initiatives Using the SUMO ontology and Choquet integral Dr. Nil Ergin, Dr. Adrian Barb
<b>hcis20-006</b>	Assistance App for a Humanoid Robot and Digitalization of Training Tasks for Post-Stroke Patients Prof. Dr.-Ing. habil Peter Forbrig, Msc. Alexandru Bunea, Prof. Dr. Med. Thomas Platz
<b>hcis20-007</b>	A Novel Cooperative Game for Reinforcing Obesity Awareness amongst Children in UAE Dr. Abdelkader Nasreddin Belkacem, Ms Ayesha Alharmoozi, Ms Fatema Alnaqbi, Ms Fatema Alshehhi, Ms Sarah Alzahmi, Dr. Sofia Ouhbi
<b>hcis20-010</b>	A Survey of Visual Perception Approaches Amal Mbarki, University Professor Mohamed Naouai
<b>hcis20-012</b>	Analysis of Long-Term Personal Service Processes using Dictionary-based Text Classification Dr. Birger Lantow, Msc. Kevin Klaus
<b>hcis20-030</b>	Spectrum Management of Power Line Communications Networks for Industrial Applications Dr Abdellah Chehri, Dr Alfred Zimmermann
<b>hcis20-031</b>	Innovations in Medical Apps and the Integration of their Data into the Big Data Repositories of Hospital Information Systems for Improved Diagnosis and Treatment in Healthcare Asst. Prof. Mustafa Asim Kazancigil

HCIS-02

Wednesday 17 June, 14:00 – 16:00

Room 2

**HCIS-02: General Track 2**

Chairs: Alfred Zimmermann, Rainer Schmidt

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>hcis20-018</b>	Towards a Smart Town: Digital Innovation and Transformation Process in a Public Sector Environments M.a. Johannes Wichmann, Prof. Dr. Kurt Sandkuhl, Prof. Dr. Matthias Wißotzki
<b>hcis20-025</b>	Automatic multiclass classification of tiny and faint printing defects based on semantic segmentation Takumi Male, Assistant Professor Sumika Female
<b>hcis20-026</b>	A Novel Hand Gesture Recognition Method Based on Illumination Compensation and Grayscale Adjustment Doctor Dan Liang, Postdoctor Junshen Chen, Professor Rossitza Setchi, Postgraduate Xiaocheng Wu
<b>hcis20-027</b>	Architecting Intelligent Digital Systems and Services Prof. Dr. Alfred Zimmermann, Prof. Dr. Yoshimasa Masuda, Prof. Dr. Kurt Sandkuhl, Prof. Dr. Rainer Schmidt
<b>hcis20-028</b>	Human-centric Perspective Towards DigitalConsenting:The Case of GAFAM Mr. Soheil Human, Mr. Florian Cech
<b>hcis20-029</b>	An Industrial Production Scenario as Prerequisite for applying Intelligent Solutions Prof. Andreas Speck, Prof. Elke Pulvermueller, Mr. Timo Wilgen, Mrs. Melanie Windrich, Mr. Dennis Ziegenhagen
<b>hcis20-052</b>	Automatic Classification of Rotating Machinery Defects using Machine Learning (ML) Algorithms Dr Abdellah Chehri, Mr Zoungrana Wend-benedo, Dr Alfred Zimmermann
<b>hcis20-001</b>	Visual Analytics Methods for Eye-Tracking Data Dr Abdellah Chehri, Dr Gwanggil Geon, Mr Nordine Quadar

HCIS-03

Thursday 18 June, 10:00 – 12:00

Room 2

***HCIS-03: Innovative Information Services for Advanced Knowledge Activity***

Chairs: Koichi Asakura, Toyohide Watanabe

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>hcis20-003</b>	Wireless Positioning and Tracking for Internet of Things in Heavy Snow Regions Dr Abdellah Chehri, Dr Paul Fortier
<b>hcis20-043</b>	Text-dependent closed-set two-speaker recognition of a key-phrase uttered synchronously by two persons Toshiyuki Ugawa, Doctor Yasuo Horiuchi, Doctor Shingo Kuroiwa, Doctor Satoru Tsuge
<b>hcis20-044</b>	Enabling Digital Co-Creation in Urban Planning and Development Dipl.pol. Claudius Lieven, Dipl.-Ing. Daniel Kulus, M.sc. Industrial Eng Bianca Lüders, M.sc. Urban Design Rosa Thoneick
<b>hcis20-046</b>	Interaction effects of environment and defect features to human cognition and skills in visual inspections Zhuo Male, Assistant Professor Sumika Female, Yusuke Male

HCIS-04

Thursday 18 June, 14:00 – 16:00

Room 2

***HCIS-04: Technologies to Improve Senior Care***

Chairs: Giovanni Luca Masala, Massimo Esposito

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>hcis20-032</b>	Potentials of Emotionally Sensitive Applications Using Machine Learning Prof. Dr. Ralf-christian Haerting, B.a. Daniel Krum, B.a. Sebastian Schmidt
<b>hcis20-038</b>	A brief review of robotics technologies to support social interventions for older users Dr Daniela Conti, Prof Santo Di Nuovo, Dr Alessandro Di Nuovo
<b>hcis20-041</b>	The Human-Robot Interaction in Robot-Aided Medical Care Ph.d Umberto Maniscalco, Eng Antonio Messina, Ph.d Pietro Storniolo
<b>hcis20-045</b>	Experiment protocol for human-robot interaction studies with seniors with mild cognitive impairments Mr Gabriel Aguiar Noury, Mr Ricky Burke, Dr Giovanni Masala, Miss Vanessa Morales, Dr Marco Palomino, Miss Margarita Tsekeni
<b>hcis20-047</b>	Designing robot verbal and non-verbal interactions in socially assistive domain for quality ageing in place Miss Ioanna Giorgi, Dr Giovanni Masala, Miss Cassiana Pratt, Miss Catherine Watson

HCIS-05

Friday 19 June, 13:00 – 15:00

Room 3

***HCIS-05: Real-time Data Processing in Industrial and IoT Applications***

Chairs: Abdellah Chehri, Gwanggil Jeon, Paul Fortier

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>hcis20-017</b>	IoT in Smart Farming Analytics, Big Data Based Architecture Phd Student El Mehdi Ouafiq, Ing-msc-phd Chehri Abdellah, Phd El Rharras Abdessamad, professor Mehdayr Adil, Ing-msc-phd Wahbi Mohamed, Phd Saadane Rachid
<b>hcis20-020</b>	Review of Internet of Things and Design of New UHF RFID Folded Dipole with Double U Slot Tag Phd Student Bouhassoune Ibtissame, Professor Chehri Abdellah, Professor Chaibi Hasna, Professor Minaoui Khalid, Professor Saadane Rachid
<b>hcis20-053</b>	Smart Water Distribution System Based on IoT Networks, A Critical Review Mr Nordine Quadar, Mr Awais Ahmad, Dr Abdellah Chehri, Mr Gwanggil Jeon
<b>hcis20-054</b>	Performance Analysis of Mobile Network Software Testbed Eng. Ali Issa, Professor Abdellah Chehri, Professor Nadir Hakem, Professor Nahi Kandil

HCIS-06

Friday 19 June, 13:00 – 15:00

Room 2

***HCIS-06: Digital Enterprise Architecture for Manufacturing Industry Financial Industry and others***

Chairs: Yoshimasa Masuda, Alfred Zimmermann, Rainer Schmidt

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>hcis20-008</b>	Method for Assessing the Applicability of AI Service Systems Prof. Hironori Takeuchi, Prof. Shuichiro Yamamoto
<b>hcis20-034</b>	How will 5G transform Industrial IoT: Latency and Reliability Analysis Dr Abdellah Chehri, Mr Hatim Kharraz, Dr Rachid Saadane, Mr Ahmed Slalmi
<b>hcis20-040</b>	Real-Time 3D Visualization of Queues with Embedded ML-based Prediction of Item Processing for a Product Information Management System Prof. Alina Chircu, Mr. Tobias Hain, Mr. Tim Merscheid, Mr. Oguz Özcan, Dr. Eldar Sultanow
<b>hcis20-042</b>	Business Process-based IS Development as a Natural Way to Human-centered Digital Enterprise Architecture Prof. Václav Repa
<b>hcis20-048</b>	Digital Architecture in Startups Prof. Václav Repa, Ing. Veronika Kohoutová
<b>hcis20-050</b>	Internet of Robotic Things with Digital Platforms: Digitization of Robotics Enterprise Professor Yoshimasa Masuda, Professor Osamu Nakamura, Professor Seiko Shirasaka, Professor Alfred Zimmermann

## InMed Paper Presentations

InMed-01

Wednesday 17 June, 10:00 – 12:00

Room 4

### *InMed-01: Advanced ICT for medical and Healthcare (1)*

Chair: Yen-Wei Chen

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>imed20-001</b>	Trial Run of a Patient Call System using Mobile Devices Mr Teramoto Kei
<b>imed20-002</b>	Advance Watermarking Algorithm using SURF with DWT and DCT for CT Images Mr Uzair Bhatti, Mr Raza Ahmad, Mr Jingbing Li, Mrs Anum Mehmood, Mr Usman Shaukat, Mr Saqib Sial
<b>imed20-003</b>	A Transcriptional Study of Oncogenes and Tumor Suppressors Altered by Copy Number Variations in Ovarian Cancer Ms Giorgia Giacomini, Prof. Monica Bianchini, Mr Gabriele Ciravegna, Dr. Romina D'aurizio, Dr. Marco Pellegrini
<b>imed20-005</b>	A Comparative Study of Pattern Recognition Methods for Predicting Glaucoma Diagnosis Mr Louis Williams, Dr Giovanni Masala, Dr Tom Sherman, Dr Salman Waqar
<b>imed20-006</b>	Analysis of Acoustic Features Affected by Residual Food in the Piriform Fossa toward Early-Detection of Dysphagia Mr. Tomoki Hosoyama, Dr. Yasuo Horiuchi, Mr. Masahiro Koto, Dr. Shingo Kuroiwa, Dr. Masafumi Nishida, Dr. Masafumi Nishimura

InMed-02

Wednesday 17 June, 14:00 – 16:00

Room 4

***InMed-02: Biomedical Engineering, Trends, Research and Technologies***

Chair: Yoshimasa Masuda

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>imed20-008</b>	Research on Encrypted Face Recognition Algorithm based on New Combined Chaotic Map and Neural Network Mr Jiabin Hu, Prof. Jingbing Li, Mr Qianguang Lin, Mr Ali Nawaz Saqib
<b>imed20-009</b>	Vision Paper for Enabling Internet of Medical Robotics Things in Open Healthcare Platform 2030 Professor Yoshimasa Masuda, Professor Osamu Nakamura, Professor Donald Shepard, Professor Tetsuya Toma
<b>imed20-010</b>	Stumbling Blocks of Utilizing Medical and Health Data: Success Factors Extracted from Australia-Japan Comparison Dr. Fukami Yoshiaki, Dr. Masuda Yoshimasa
<b>imed20-011</b>	Digital Financial Incentives for Improved Population Health in the Americas Prof. Donald Shepard, Mr. Yoshimasa Masuda
<b>imed20-014</b>	Improving Depth Perception using Multiple Iso-Surfaces for Transparent Stereoscopic Visualization of Medical Volume Data Mr Aoi Daimon, Dr Hasegawa Kyoko, Dr Li Liang, Prof Tanaka Satoshi, Dr Sakano Yuichi

InMed-03

Thursday 18 June, 10:00 – 12:00

Room 4

***InMed-03: Advanced ICT for medical and Healthcare (2)***

Chair: Satoshi Tanaka

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>imed20-016</b>	Dynamic Facial Features Associated with Positive Emotional Voice Stimuli for Detection of Depressive Symptoms / Jia-Qing Liu, Yue Huang, Xin-Yin Huang, Xiao-Tong Xia, Xi-Xi Niu, Lanfen Lin, Yen-Wei Chen Jiaqing Liu, Prof Yen-wei Chen, Yue Huang, Prof Xin-yin Huang, Xi-xi Niu, Xiao-tong Xia
<b>imed20-017</b>	Hand-Crafted and Deep Learning-based Radiomics Models for Recurrence Prediction of Non-Small Cells Lung Cancers / Panyanat Aonpong, Yutaro Iwamoto, Weibin Wang, Lanfen Lin, Yen-Wei Chen Mr. Panyanat Aonpong, Mr. Yen-wei Chen, Mr. Yutaro Iwamoto, Mrs. Lanfen Lin, Mr. Weibin Wang
<b>imed20-018</b>	Weakly and Semi-Supervised Deep Level Set Network for Automated Skin Lesion Segmentation Zhuofu Deng, Yeda Chen, Xiaolin Qiu, Yi Xin
<b>imed20-019</b>	Development of an Active Compression System for Venous Disease Lahiru Paranamana, Ranjith Amarasinghe, Supun Gunawardane, Gayani Nandasiri, Indrajith Nissanka, Maheeka Silva
<b>imed20-024</b>	Self-Skill Training System for Chest Compressions in Neonatal Resuscitation Workshop Mr Noboru Nishimoto, Clinical Fellow Shintaro Hanaoka, Assistant Proffesor Kogoro Iwanaga, Senior Kohei Matsumura, Professor Haruo Noma, Assistant Proffesor Sho Ooi

InMed-04  
 Thursday 18 June, 14:00 – 16:00  
 Room 4

***InMed-04: Support System for Medicine and Healthcare***

Chair: Haruo Noma

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>imed20-007</b>	Automatic Joint Space Distance Measurement Method for Rheumatoid Arthritis Medical Examinations Dr. Tomio Goto, Dr. Koji Funahashi, Mr. Yoshiki Sano
<b>imed20-015</b>	A 3D Shrinking-and-Expanding Module with Channel Attention for Efficient Deep Learning-Based Super-Resolution Mr. Yin hao Li, Prof. Yen-wei Chen, Dr. Yutaro Iwamoto
<b>imed20-022</b>	Design and Simulation of a Robotic Manipulator for Laparoscopic Uterine Surgeries Charith Premachandra, Dr Ranjith Amarasinghe, Nimaya Herath, Milan Liyanage, Dr Kanishka Madusanka, Menaka Thathsarana
<b>imed20-023</b>	Design of a Novel MEMS based Microgripper with Hybrid Actuation to Determine Circulating Tumor Cell (CTC) Progression Mr. Manuka Suriyage, Dr. Ranjith Amarasinghe, Mr. Dayan Jayawardena, Mr. Buddhika Prabath, Mr. Maheeka Silva, Mr. Chevindu Wickramathilake
<b>imed20-020</b>	Design and Development of a Droplet-based Microfluidics System Using Laser Fabrication Machining Techniques for a Lab on a Chip Device Mr Peshan Sampath, Dr Y W R Amarasinghe, Mr S P Hettiarachchi, Mr N H R G Melroy

## SEEL Paper Presentations

SEEL-01

Wednesday 17 June, 14.00-16.00

Room 3

### ***SEEL-01: Smart Education***

Co-chairs: Dr. Olivier Bonnaud and Dr. Vladimir Uskov

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>Welcome Address</b>	SEEL-2020: Welcome Address Vladimir L. Uskov
<b>seel20-067</b>	Smart Learning Analytics: Student Academic Performance Data Representation, Processing and Prediction Vladimir L. Uskov, Jeffrey P. Bakken, Kaustubh Gayke, Juveriya Fatima, Brandon Galloway, Keerthi Sree Ganapathi, Divya Jose
<b>seel20-023</b>	EIFEL – a New Approach for Digital Education Karsten Henke, Heinz Dietrich Wuttke, Johannes Nau
<b>seel20-055</b>	FINMINA: a French National Project Dedicated to Educational Innovation in Microelectronics to Meet the Challenges of a Digital Society Olivier Bonnaud
<b>seel20-039</b>	Effect of International Student Competition Experience on Smart Education Heather N. Yates, Sreemala Das Majumder, Blake Wentz
<b>seel20-051</b>	Knowledge-Based Model Representation for a Modern Digital University Tamara Shikhnbieva

SEEL-02

Wednesday 17 June, 16.30-18.30

Room 3

***SEEL-02: Smart e-Learning***

Chairs: Dr. Danguole Rutkaskeine and Dr. Blanka Klimova

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-054</b>	Relevancy of the MOOC about Teaching Methods in Multilingual Classroom Danguole Rutkauskiene, Greta Volodzkaite, Daniella Tasic Hansen, Madeleine Murray, Ramunas Kubiliunas
<b>seel20-004</b>	e-learning Tools for Informal Caretakers of Patients with Dementia – a Review Study Blanka Klímová, Marcel Pikhart
<b>seel20-044</b>	Automation of e-Workshop Project Control for Knowledge-Intensive Areas Elena A. Boldyreva, Lubov S. Lisitsyna
<b>seel20-032</b>	Assessment of Student Work and the Organization of Individual Learning Paths in Electronic Smart-Learning Systems Leonid L. Khoroshko, Maxim A. Vikulin, Alexey L. Khoroshko
<b>seel20-035</b>	Implementation of Blended Learning into ESP for Medical Staff Ludmila Faltýnková

SEEL-03

Thursday 18 June, 14.00-16.00

Room 3

***SEEL-03: Smart Pedagogy***

Co-Chairs: Dr. Michele Cole and Dr. Louis Swartz

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-001</b>	(01) Providing an Ethical Framework for Smart Learning: A Study of Students' Use of Social Media Michele T. Cole, Louis B. Swartz
<b>seel20-024</b>	"Product-Based" Graduate Program at ASCREEN Interactive Center Slavyana Bakhareva, Natalya Minkova, Irina Semyonkina, Denis Yarygin
<b>seel20-052</b>	Developing a Conceptual Framework for Smart Teaching: Using VR to Teach Kids How to Save Lives Tone Lise Dahl, Siw Olsen Fjørtoft, Andreas D. Landmark
<b>seel20-043</b>	Blended Learning Technology Realization Using a Basic Online Course Lubov S. Lisitsyna, Marina S. Senchilo, Evgenii A. Efimchik
<b>seel20-037</b>	Effects on Girls' Emotions During Gamification-Tasks with Male Priming in STEM Subjects via Eye Tracking Tabea Wanner, Tamara Wanner, Veit Etzold

SEEL-04

Thursday 18 June, 14:00 – 16:00

Room 6

***SEEL-04: Smart Education: Case Studies and Research***

Co-chairs: Dr. Elvira Strakhovich and Dr. Seyeong Chun

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-041</b>	The Use of Students' Digital Portraits in Creating Smart Higher Education: A Case Study of the AI Benefits in Analyzing Educational and Social Media Data Svyatoslav A. Oreshin, Andrey A. Filchenkov, Daria K. Kozlova, Polina G. Petrusha, Lubov S. Lisitsyna, Alexander N. Panfilov, Igor A. Glukhov, Egor I. Krasheninnikov, Ksenia I. Buraya
<b>seel20-050</b>	Using Smart Education Together with Design Thinking: a Case of it Product Prototyping by Students Studying Management Elvira Strakhovich
<b>seel20-014</b>	Application of Smart Education Technologies on the Disciplines of the Music-Theoretical Cycle in Musical College and University Svetlana A. Konovalova, Nataliya I. Kashina, Nataliya G. Tagiltseva, Lada V. Matveeva, Denis N. Pavlov
<b>seel20-017</b>	Research on “Diteracy” Measurement as a Smart Literacy Element Seyeong Chun, Jeonghun Oh, Seongeun Lee
<b>seel20-018</b>	Internet Resource as a Means of Diagnostics and Support of Artistically Gifted University Students Nataliya I. Kashina, Svetlana A. Konovalova, Anastasiya I. Suetina, Sergey I. Mokrousov, Elvira M. Valeeva, Anastasia A. Gizatulina

SEEL-05

Thursday 18 June, 16:15 – 18:15

Room 3

***SEEL-05: Smart Education: Systems and Technology***

Co-chairs: Dr. Marcel Pikhart and Dr. Vladimir Uskov

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-068</b>	Data Cleaning and Data Visualization Systems for Learning Analytics Vladimir L. Uskov, Jeffrey P. Bakken, Keerthi Sree Ganapathi, Kaustubh Gayke, Brandon Galloway, Juveriya Fatima
<b>seel20-005</b>	Computational Linguistics and Mobile Devices for ESL: the Utilization of Linguistics in Intelligent Learning Marcel Pikhart, Blanka Klímová, Ales Berger
<b>seel20-015</b>	Personal Generative Libraries for Smart Computer Science Education Vytautas Štuikys, Renata Burbaitė, Ramūnas Kubiliūnas, Kęstutis Valinčius
<b>seel20-042</b>	The Virtual Machine Learning Laboratory with Visualization of Algorithms Execution Process Vadim D. Kholoshnia, Elena A. Boldyreva

SEEL-06

Thursday 18 June, 16:15 – 19:15

Room 6

***SEEL-06: Special Session IS01: Smart University Development: Organizational and Managerial Issues***

Co-chairs: Dr. Lyudmila V. Glukhova and Dr. Anna A. Sherstobitova

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-048</b>	Strategic Management of Smart University Development Leyla F. Berdnikova, Irina G. Sergeeva , Sergey A. Safronov, Anastasia Yu. Smagina, Aleksandr I. Ianitckii
<b>seel20-007</b>	Concepts of Educational Collaborations and Innovative Directions for University Development: Knowledge Export Educational Programs Svetlana A. Gudkova, Tatiana S. Yakusheva, Elena A. Vasilieva, Tatiana A. Rachenko, Ekaterina A. Korotenkova
<b>seel20-026</b>	Project Management as a Tool for Smart University Creation and Development Yana S. Mitrofanova, Valentina I. Burenina, Anna V. Tukshumskaya, Tatiana N. Popova
<b>seel20-028</b>	Human Resource Management System Development at Smart University Leyla F. Berdnikova, Natalia O. Mikhalenok, Veronika A. Frolova, Victoria V. Sukhacheva, Artyom I. Krivtsov
<b>seel20-013</b>	Integration of Agile Methodology and PMBOK Standards for Educational Activities at Higher School Workshop Anna A. Sherstobitova, Lyudmila V. Glukhova, Elena V. Khozova, Raisa K. Krayneva
<b>seel20-027</b>	Intellectual Resources in the Development of Smart University Leyla F. Berdnikova, Natalia O. Mikhalenok, Svetlana V. Pavlova, Oksana G. Gortsevskaya, Artyom I. Krivtsov
<b>seel20-016</b>	VUCA-Managers Training for SMART Systems: Innovative and Organisational Approach Lyudmila.V. Glukhova, Anna A. Sherstobitova, Elena N. Korneeva, Raisa K. Krayneva
<b>seel20-049</b>	Economic and Organizational Aspects of University Digital Transformation Tatiana N. Popova, Yana S. Mitrofanova, Olga A. Ivanova, Svetlana B. Vereshchak

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<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-036</b>	Security by Design Development Methodology for File Hosting Case Ilya Danenkov, Daria Kolesnikova, Aleksandr Babikov, Radda Iureva

SEEL-07

Friday 19 June, 9:00 – 12:00

Room 6

***SEEL-07: Special Session IS03: Mathematical Models in Smart Education and e-Learning***

Co-Chairs: Dr. Natalia A. Serdyukova and Dr. Natalya V. Serdyukova

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-003</b>	Quasi-fractal Algebraic Systems as Instruments of Knowledge Control Natalia A. Serdyukova, Vladimir I. Serdyukov
<b>seel20-012</b>	Model-Based Analysis for Smart University Development Lyudmila V. Glukhova, Svetlana D. Syrotyuk, Svetlana A. Gudkova, Andrei Yu. Aleksandrov
<b>seel20-010</b>	University Financial Sustainability Assessment Models Anna A. Sherstobitova, Maksim O. Iskoskov, Valery M. Kaziev, Marina A. Selivanova, Elena N. Korneeva
<b>seel20-011</b>	Modeling of Residual Knowledge Estimation in Smart University Yana S. Mitrofanova, Lyudmila V. Glukhova, Anna V. Tukshumskaya, Tatiana N. Popova
<b>seel20-019</b>	Smart Algebraic Approach to Analysis of Learning Outcomes Natalia A. Serdyukova, Vladimir I. Serdyukov, Sergey S. Neustroev, Elena A. Vlasova, Svetlana I. Shishkina
<b>seel20-020</b>	Taxology in Smart University Economics: New Approaches to Teaching Taxation Natalya V. Serdyukova, Ivan M. Kolpashnikov
<b>seel20-009</b>	Quality Assessment of Modular Educational Resources for Smart Education System Yana S. Mitrofanova, Olga A. Filippova, Svetlana A. Gudkova, Elena V. Ivanova
<b>seel20-006</b>	Soft Skills Simulation and Assessment: Qualimetric Approach for Smart University Svetlana A. Gudkova, Tatiana S. Yakusheva, Anna A. Sherstobitova, Valentina I. Burenina
<b>seel20-008</b>	Simulation for Evaluating the Feedback Effectiveness at e-learning University System Olga A. Kuznetsova, Sabina S. Palferova, Svetlana A. Gudkova, Oksana A. Evstafeva

SEEL-08

Friday 19 June, 9:00 – 12:00

Room 3

***SEEL-08: Special Session IS04: Models of Professional Practice in Higher Education***

Co-Chairs: Dr. Djordje Nadrljanski and Dr. Mila Nadrljanski

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-063</b>	Maritime Processes and Communications Management Djordje Nadrljanski, Mira Pavlinović, Ante Sanader
<b>seel20-062</b>	Student Practical Training as an Education Factor Djordje Nadrljanski, Kristina Vidović
<b>seel20-061</b>	Training of Student Practical Training Managers Mila Nadrljanski, Veronika Nemetschek, Ante Sanader
<b>seel20-064</b>	Professional Preparation of Teachers for New Models of Student Practical Training Mila Nadrljanski, Mira Pavlinović, Slavko Šimundić
<b>seel20-059</b>	The Role and Importance of Digital Practical Training of Personnel Management Students Sanja Frkić, Irena Mašće, Kristina Vidović
<b>seel20-066</b>	Contributions of Digitization and Professional Practice to the Study of Architecture Goran Radović, Sanja Frkić, Veronika Nemetschek
<b>seel20-065</b>	Practical Training of Nursing Students Ana Roguljić, Ilija Guteša
<b>seel20-056</b>	Increase in Cooperation between Industry and Post Graduate Education via OpenLab's and MobileLab's in South Africa Momir Tabakovic, Marc-Oliver Otto, Walter Commerell, Csilla Csapo, Herman Vermaak

SEEL-09

Friday 19 June, 14:00 – 15:00

Room 6

***SEEL-09: Special Session IS02: Smart Education, Smart Universities and their Impact on Students with Disabilities***

Chair: Dr. Jeffrey P. Bakken

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>seel20-057</b>	Smart University: Gesture Recognition Systems for College Students with Disabilities Jeffrey P. Bakken, Nivee Varidireddy and Vladimir L. Uskov
<b>seel20-045</b>	University Centers for Students with Disabilities: A Pilot Study Carrie Anna Courtad, Jeffrey P. Bakken
<b>seel20-058</b>	Face Recognition Systems for Smart Universities Jeffrey P. Bakken, Nivee Varidireddy and Vladimir L. Uskov

## STS Paper Presentations

STS-01

Wednesday 17 June, 10:00 – 12:00

Room 6

### **STS-01: Multi-modal transport**

Chair: Ziling Zeng

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>sts20-001</b>	Emission Evaluation of Marine Traffic Dr. Jingwen Qi, Dr Shuaian Wang
<b>sts20-002</b>	How to model the influence of in-vehicle crowding on travel behavior: a comparison among moderation, independent variable and interaction Dr. Kun Gao, Ms Jieyu Fan, Ms Ziling Zeng
<b>sts20-004</b>	Assessing the influences of weather and environment factors on traffic speed of freeway Professor Jianjun Wu, Ms. Danni Cao, Ms. Ziling Zeng
<b>sts20-005</b>	A decision support system based on transport modelling for events management in Public Transport Networks Prof. Luca Studer, Dr. Serio Agriesti, Dr. Sergio Arduca, Dr. Paolo Gandini, Dr. Giovanna Marchionni, Dr. Marco Ponti
<b>sts20-006</b>	Existing and Future Investigation of Charging Technology for Electric Bus Ms. Ziling Zeng, Ms. Danni Cao, Professor Xiaobo Qu
<b>sts20-007</b>	Influencing Factor Analysis of Logistics Services Satisfaction in China: A Binary Logit Model Approach Wen Xu, Professor Jiajun Li, Bin Shen

STS-02

Wednesday 17 June, 14:00 – 16:00

Room 6

***STS-02: Traffic flow theory***

Chair: Yang Yu

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>sts20-008</b>	To investigate the hidden gap between traffic flow fundamental diagrams and the derived microscopic car following models: A theoretical analysis Mr Yang Yu, Prof Xiaobo Qu, Miss Jie Zhu
<b>sts20-009</b>	A Leader-based Vehicle Platoon Control Strategy at Signalized Intersections Considering Efficiency Mr Jian Zhang, Prof Xiaobo Qu, Prof Tie-qiao Tang, Mr Yang Yu
<b>sts20-010</b>	The Impact of Increasing Minor Arterial Flow on Arterial Coordination: an Analysis Based on MAXBAND Model Mr Liang Xu, Professor Xiaobo Qu, Miss Lixiao Shen
<b>sts20-011</b>	Traffic safety assessment of deceleration function area based on TTC model Associate Professor Weiwei Qi, Bin Shen, Zhexuan Wang
<b>sts20-012</b>	Realistic 5.9 GHz DSRC Vehicle-to-Vehicle Wireless Communication Protocols for Cooperative Collision Warning in Underground Mining Dr Abdellah Chehri, Mr Hamou Chehri, Dr Nadir Hakim, Dr Rachid Saadane
<b>sts20-013</b>	Multivariate Time Series Analysis Using Recurrent Neural Network to Predict Bike Sharing Demand Miss Kanokporn Boonjubut, Professor Hiroshi Hasegawa

STS-03

Thursday 18 June, 10:00 – 12:00

Room 6

***STS-03: Traffic Engineering***

Chair: Kun Gao

<b>PROSE Paper No</b>	<b>Paper Title / Authors</b>
<b>sts20-016</b>	Real Time Data Processing in Autonomous Vehicles Based on Distributed Architecture: a Case Study Mr El Hafid Yassine, Dr Abdellah Chehri, Mr Abdessamad El Rharras, Dr Rachid Saadane, Mr Mohammed Wahbi
<b>sts20-017</b>	Injury Severity Analysis of Secondary Incidents Ms Jing Li, Prof Jingqiu Guo
<b>sts20-018</b>	Communication and Localization Techniques in VANET Network for Intelligent Traffic System in Smart Cities: A Review Dr Abdellah Chehri, Mr Nordine Quadar, Dr Rachid Saadane
<b>sts20-019</b>	Vehicle Scheduling Model for an Electric Bus Line Jinhua Ji, Associate Professor Yiming Bie, Bin Shen
<b>sts20-020</b>	Modelling the relationships between headway and speed in saturation flow of signalised intersections Mr. Yang Teng, Dr. Kun Gao, Mr. Jin Xu, Ms. Ziling Zeng
<b>sts20-021</b>	Shore Power Price Competition Between Ports Dr. Jingwen Qi, Dr Xiaobo Qu, Dr Shuaian Wang

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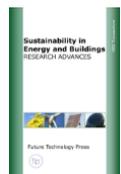
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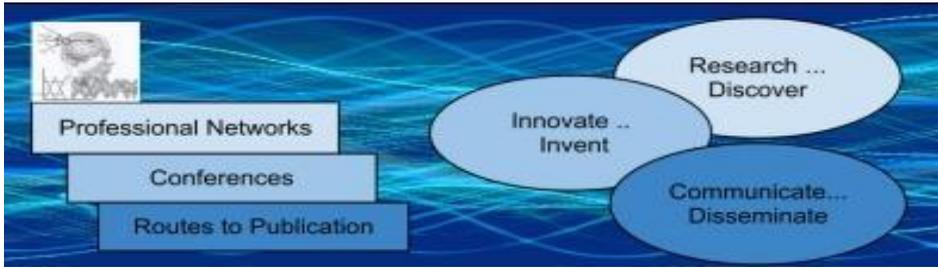
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