



Special Discussion Section and Exhibition (Industrial Centre)

Scope

The International Conference IDT 2019 is held in countries of Visegrad region traditionally. Its aim is to bring together researches, developers, teachers from academy as well as industry working in all areas of information and digital technologies. In an attempt to promote the dissemination of recent industrial developments and the interaction between industry and academia, IDT 2019 will encourage the submission of industry oriented technical applications. These special contributions will be submitted and will be present in frame of Industrial Centre supported by the International Visegrad Fund. The evaluation of these contributions will address the innovation/originality of the industrial application, the quality of presentation, and the technical interest to the community working in that field.

Topics

The Industrial centre is focused on a wide range of applications of computer systems. Topics of interest include but are not limited to:

- Digital signal processing
- Communication and control systems and networks
- Measurement systems and instrumentations
- Hardware and software solutions
- Medical Image Analysis
- Computer-Aided Diagnosis
- Telemedicine, Telehealth
- Testing and fault-tolerant systems
- Risk and hazard analysis
- Education, e-learning

Organized by:



PAVOL JOZEF ŠAFÁRIK UNIVERSITY IN KOŠICE
Faculty of Medicine



VŠB-Technical University of Ostrava
Ostrava - Poruba, Czech Republic



University
of Defence



UNIVERSITY of
DEBRECEN



University of Rzeszów

Time Schedule

Monday, June 24, 2019		
16:00-19:00	Early registration	
Tuesday, June 25, 2019		
08:00-10:15	Registration	
10:15-10:30	Opening of the Conference (room C-9)	
10:30-11:30	The First Plenary Section (room C-9)	
11:30-12:00	Coffee/tea	
12:00-13:00	Section IC1 (room C-9)	
13:00-14:00	Lunch	
14:00-15:40	Section I (room C-6)	Section E (room RA003)
15:40-16:00	Coffee/tea	
16:00-18:00	Section IC2 (room RA003)	
18:00-20:00	Reception	
Wednesday, June 26, 2019		
08:40-10:00	IDT Exhibition (atrium)	Section NBT (room C-6 and RA003)
10:00-10:30		Coffee/tea
10:30-11:30		The Second Plenary Section (room C-9)
11:30-12:30		Section IC3 (room C-9)
12:30-13:30	Lunch	
13:30-21:00	Discussion and Team Building. IDT Exhibition (atrium)	
Thursday, June 27, 2019		
09:00-10:40	Section IC4 (room RA003)	
10:40-11:00	Coffee/tea	
11:00-13:00	The Third Plenary Section (room C-9)	
13:00-14:00	Lunch	
14:00-15:40	Section IC5 (room C-9)	
15:40-17:00	Section IC6-CERES (room C-9)	

Detailed Schedule

Venue: Atrium of the Faculty of Information Sciences and Management,
University of Žilina (FRI, UNIZA)

Tuesday, June 25

Opening of the Conference

10:15-10:30 (room C-9)

The Conference Opening

Prof. Elena Zaitseva

Welcome words from the University of Žilina

Prof. Karol Matiaszko

Welcome words of the Dean of the Faculty

Dr. Emil Kršák

The First Plenary Section

10:30-11:30 (room C-9)

Moderators: Prof. Frank Coolen, United Kingdom

Assistant: Ing. Roman Ceresnak, Slovakia

Prof. Coen van Gulijk (Institute of Railway Research, University of Huddersfield, UK)

Digital re-engineering for safety management

Section IC1. Industrial Centre

12:00-13:00 (room C-9)

Moderators: Prof. Radim Bris, Czech Republic

Assistant: Ing. Roman Ceresnak, Slovakia

Marko Cepin (ESRA)

European Safety and Reliability Association (ESRA) presentation

Matej Pacha (IEEE)

Industry-oriented activities of IEEE Czechoslovakia Section

Milos Zatkan (Simcon)

Simulation of transportation logistic terminals

Section I. Information Technologies

14:00-15:40 (room C-6)

Chair: Dr. Michal Kvet, Slovakia

Assistant: Ing. Tomas Kello, Slovakia

Aleksey Stepovoy, Alexander Bazhanov, Vasily Rubanov and Roman Vashchenko
Application of artificial neural networks for building sensors models of physical quantity

Michal Kvet
Data distribution in ad-hoc transport network

Radim Briš, Lenka Příbylová, Lubomír Martínek and Vladimír Benčurik
The use of survival analysis to investigate risk factors for anastomotic leak

Roman Čerešňák and Michal Kvet
Comparison Apaches for Distributed Processing

Tomas Kello and Emil Kršák
Analyze train data set with use of linear regression and cloud systems

Section E: Education

14:00-15:40 (room RA003)

Chair: Dr. Miroslav Kvassay, Slovakia

Assistant: Ing. Jan Rabcan, Slovakia

Baptiste Jacquet, Alexandre Hullin, Jean Baratgin and Frank Jamet
The Impact of the Gricean Maxims of Quality, Quantity and Manner in Chatbots

Lenka Urbanská and Jaroslav Majerník
Teaching IT Courses at PJSU Faculty of Medicine

Patrik Voštinár and Nika Klimová
Experience with Using Robots for Teaching Programming

Jaroslav Majernik, Lenka Urbanská and Andrea Kačmariková
Improving the Quality of Human Anatomy Teaching using Online Repository of Cadaveric Dissections: Perceptions of Medical Students

Jan Rabcan, Patrik Rusnak, Denisa Macekova and Miroslav Kvassay
Evaluation of data reliability based on mathematical approach of importance analysis

Section IC2. Industrial Centre

16:00-18:00 (room RA003)

Chair: Prof. Zdenek Vintr, Czech Republic

Assistant: Ing. Jan Rabcan, Slovakia

Martin Gandler, Florian Eibensteiner and Josef Langer

3D Printable Sensors for Smart Textiles

Szilvia Szeghalmy, Attila Fazekas and Marianna Zichar

Smartphone based driver-assistance system for urban environments

Phillip Petz, Florian Eibensteiner and Josef Langer

Performance Evaluation of Conductive Textiles for Movement Pattern Recognition in Smart Socks

Jaroslav Majernik and Lenka Urbanská

Implementation of e-Assessment Management System into the ICT Infrastructure of University Education

Xuan Phong Cu and Zdenek Vintr

Reliability Estimation of Electronic Components by Step-Stress Accelerated Reliability Testing

Maroš Janovec and Michal Koháni

Battery degradation impact on the electric bus fleet scheduling

Dorota Bochnacka

Optimal management of supply chain: M2M approach

Wednesday, June 26

Section NBT. New Information & Biomedical Technology

08:40-10:00 (room C-6 and RA003)

Chair: Prof. Michitaka Kameyama, Japan and Prof. Paolo Soda, Italy

Assistant: Ing. Tomas Kello and Ing. Frantisek Kajanek, Slovakia

Jarosław Szkoła and Krzysztof Pancierz

Pattern Recognition in Sequences Using Multistate Sequence Autoencoding NN

Wiesław Paja

Generational Feature Selection using Random Forest Approach Critical Infrastructure Impacted by Weather Changes

Adéla Vrtková and Václav Procházka

Comparing the performance of regression models, random forests and neural networks for stroke patients' outcome prediction

The Second Plenary Section

10:30-11:30 (room C-9)

Moderators: Prof. Marko Cepin, Slovenia

Assistant: Ing. Roman Ceresnak, Slovakia

Prof. Paolo Soda (Campus Bio-Medico University in Roma, Italy)

Artificial intelligence meets clinical imaging for personalized medicine in oncology

Section IC3: Industrial Centre

11:30-12:30 (room C-9)

Moderators: Prof. Min Xie, Hong Kong

Assistant: Ing. Roman Ceresnak, Slovakia

Adrian Petrik and Jan Nezkusil (StaPro)

eRadiology - sharing results effectively

Pavel Sigeťi and Juraj Kajan (TatraMed)

Modern methods of radiological data imaging

IDT Exhibition

08:40-12:30 (atrium FRI UNIZA)

Moderator: Prof. Elena Zaitseva, Slovakia

SteadyJax - Emese-Soft Informatikai és Szoftverfejlesztő Kft. (Hungary)

The company is primarily specialized in developing web sites and web-based applications. Following current trends of flexibility and ease of use, they build websites based on high-end content management systems such as WordPress and Drupal. The greatest advantage is the variety of market segments they can cover: from personal introductory sites to multiple-thousand-visitors-per-day portals; whether the goal is to give information or to get customers using a web-shop, they can come up with a feasible solution. They offer full support of a web solution lifetime, from setting up the server environment to tweaking performance.

STAPRO Slovensko s.r.o. (Slovakia)

Company STAPRO is a leading supplier of software and services to hospitals and other healthcare providers in Central European markets. They create software for all areas of healthcare - medical (hospital information systems, laboratory systems), but also non-medical (management information systems, catering systems, warehouse logistics and many others). They deliver a comprehensive solution based on own products complemented by all related services, including long-term support and outsourcing of medical information systems. Their expert consulting services enable care providers to effectively control reporting quality and maintain effective contractual relationships with health insurance companies. In the long term, they focus on the e-health care and the safe sharing of medical documentation among healthcare participants.

TatraMed Software s.r.o. (Slovakia)

Company TatraMed Software operates in the field of medical informatics, is focused on the development of diagnostic and therapeutic software systems based on three-dimensional visualization of patient image data. Currently, they specializes in expert consulting, scientific and research activities and the development of highly sophisticated software for radiological diagnostics, radiotherapy and surgical planning mainly in the following areas: (a) PACS technology of film-free hospitals; (b) systems for radiological diagnosis and clinical imaging; (c) radiotherapy planning.

IIT - Institute of Information Technologies (Slovakia)

The IIT was founded for support and develop teaching and research aspects of information technologies in Slovakia and other countries. We help universities and research institutes in teaching and researching in IT. We are oriented to realisation of different activities for grown of potential of talented young researchers and PhD students and help them to oriented in the global market. We are distributed our own teaching and scientific experience into Slovakia and beyond. We are looking to help grow young researchers with global impact.

M2M Solutions (Slovakia)

M2M Solutions has long supported the introduction of innovative solutions into the industry in collaboration with companies such as Whirlpool, DHL, PSA and the latest Jaguar. The result is a broad product portfolio, as well as a number of positive references in Slovakia and abroad. As part of the modernization of M2L technology, M2M Solution have also developed new IoT platform, which addresses the specific challenges of industrial deployment of complex systems. In addition to creating a digital twin warehouse topology and intelligently managing the configuration of HW components, M2M Solution products also offers a highly robust solution for orchestrating complex communication schemes of different protocols.

MakoLab - Digital Solutions Agency (Poland)

This Agency has been created near 30 years ago. The experts team of MakoLab support for selecting the proper competencies and IT tools to build the perfect IT solutions dedicated to supporting complex, ongoing business processes. MakoLab Agency create an innovative solutions, such as semantic web, block-chain technology, etc. Their software productions and decisions lies in deploying working business solutions that belong to a list of original theoretical innovations.

Universality (Poland)

This firm is oriented to support and development of professional education. Their specialists create software applications for practical assignments to use in class. Defines career paths, or thematic assignment sets, to develop and test specific skills and competencies such as data analysis, block-chain development, etc. Their help introduce new technologies into university curriculum programs. The main objective this process is educates candidates to fit future job requirements. It can be implement for supports future careers of their students: each teaching assignment can be a point of contact with their potential employer.

Smart Education (Poland)

Smart Education is a team of passionate e-learning professionals who support Customers by providing effective, innovative, reliable solutions, services and products. One of essential product of this firm is e-learning platform LMS. It develop employee competences by providing them with training content available 24/7 on every stationary and mobile device. It allow to increase efficiency, commitment, cooperation and activity. This e-learning platform is a central point for acquiring and sharing knowledge testing for the entire organization. The platform for organizing stationary training supports training departments, trainers, team managers and employees. It is a support a quick organization and registration of trainings together with supporting tools such as sharing content before and after trainings, pre-tests and post-tests, satisfaction surveys, attendance lists, reports, certificates.

European Safety and Reliability Organization (Belgium)

ESRA aims at the promotion and application of safety and reliability techniques and risk management in all branches of technology. In particular, ESRA pursues the following goals: (a) to assure the establishment of an information network between the members and various industrial, academic and professional organizations; (b) to promote and encourage good practices in the application of safety and reliability techniques and risk management; (c) to promote cooperation between national professional associations, standardization organizations, industrial and equivalent groups or associations assuring the mutual exchange of information; (d) to promote the formation of professional societies or associations in European Union member states; (e) to promote relevant education and technical training, and harmonize their practices, etc.

Science and Technology Center SIGMA (Russian Federation)

SIGMA is a provider of digital platform engineering and software development services. The company has software development of automated control systems, technology consulting practice and further enhances its strong capabilities in data management and cloud services. We enables a range of automated systems and speeds time-to-value for clients looking to move faster toward modern solutions. There are a lot of manufacturing systems for industrial, agricultural, education and other application areas have been development under SIGMA.

StADyO Science & Research Center (Russian Federation)

StADyO was founded for development of mathematical models, numerical methods, software and algorithmic support and implementation of computer-aided design, monitoring and integrated high-tech and settlement theoretical and experimental study of stress-strain state, strength, stability, reliability and security of critical energy facilities, civil and industrial construction, machinery structure, biotechnology and other high-tech industries. Among the firm's organizers - a group of leading scientists and experts from Russia, have traditionally cooperated in research and development in these areas.

Scientific Centre for Aerospace Research of the Earth (Ukraine)

The Centre is specialized in the acquisition and thematic interpretation of remote sensing data, aerospace image processing and preparation of geo-information products. Energy-mass exchange in geosystems and their influence on physical and chemical mechanisms, which are responsible for the spectral response from the natural objects and are very sensitive to the different environmental and anthropogenic factors are being studied. The models for the general spectral patterns of the environmental objects are developed. Their relations with the environment features and properties are determined and estimated. On a basis of the spectral models the new methods and technologies of acquisition and thematic remote sensing data processing are developed. The studies are fundamental and application-oriented.

Thursday, June 27

Section IC4: Industrial Centre

9:00-10:40 (room RA003)

Chair: Dr. Hana Kopackova, Czech Republic

Assistant: Ing. Jan Rabcan, Slovakia

René Lamber and Thomas Grechenig

Quantitative Requirements Evaluation for an European Refugee Management System serving Migrants and Institutions

Stanislava Šimonová and Meseret Yihun Amare

Aspects of Digital Documents Archiving by the Organizations in the Czech Republic in Context of the EU eGovernment

Sergey Stankevich, Elena Zaitseva, Iryna Piestova, Patrik Rusnak and Jan Rabcan

Satellite Imagery Spectral Bands Subpixel Equalization Based on Ground Classes' Topology

Hana Kopackova, Jitka Komarkova and Jakub Jech

Technology helping citizens to express their needs and improve their neighborhood

Jitka Komarkova, Pavel Sedlak, Stanislav Struska and Andrea Dymakova

Usability Evaluation the Prague Geoportal: Comparison of Methods

The Third Plenary Section

11:00-13:00 (room C-9)

Moderators: Prof. Coen van Gulijk, United Kingdom

Assistant: Ing. Roman Ceresnak, Slovakia

Prof. Marko Čepin (University of Ljubljana, Slovenia)

Reliability of Smart Grids

Prof. Min Xie (City University of Hong Kong, Hong Kong)

Opportunities and Challenges of the Reliability of Artificial Intelligent Systems

Section IC5. Industrial Centre

14:00-15:40 (room C-9)

Moderators: Prof. Krzysztof Pancierz, Poland

Assistant: Ing. Patrik Rusnak, Slovakia

Sebestyén Hunor Péter (SteadyJax)

Establishing and maintaining the security and stability of websites

Krzysztof Pancierz (MakoLab, Universality, Smart Education)

Research, education, business - selected examples of cooperation

Alexander Bazhanov (STC-SIGMA)

Scientific and Industry potential of Science and Technology Center SIGMA

Pavel Akimov and Alexander Belostotsky (StaDyO)

Scientific and Industry potential of StaDyO Science & Research Center

Ondrej Kasaj (Global Logic)

Scientific and Industry applications of Global Logic (Slovakia)

Section IC6: Industrial Centre - CERES

15:40-17:00 (room C-1)

Chair: Prof. Vitaly Levashenko, Slovakia

Assistant: Ing. Jan Rabčan, Slovakia

Ladislav Burita and Taha Nejad Falatouri Moghaddam

Analysis of Data from the Social Media

Anett Rácz and Gergő Zilizi

Virtual Reality Aided Historical Exhibition and Monument Reconstruction

Zdenek Vintř and Michal Vintř

Current Collector Maintenance Optimization

Nune Pratyusha and Santanu Mandal

Hysteresis Loop-Area of Generic Memristor Emulator

Pinar Kirci and Fatih Cambek

Hand Gesture Detection

Elena Zaitseva, Mykola Lubskyi, Ján Rabčan

Application of fuzzy filtering for thermal infrared satellite data resolution

Roman V. Fedorenko, Tamas Czegledy, Nadezda A. Zaichikova

Development of foreign economic activity at the regional level: impact factors

Roman Ceresnak and Olga Chovancova

Comparison of Query Performance BetweenMySQL andMongoDB Database

Alexsandr M. Kondratov and Oleg V. Maslenko

Remote sensing satellite virtual constellation optimizing with target recognition

Vladislav Solovtsov and Dzmitry Adzinets

Algorithm of routes optimization for mobile robots

Welcome to the metropolis of Northwest Slovakia



Žilina is a natural centre of north-western Slovakia and with a population of 83 297 inhabitants (as per May 2017) it ranks among the largest cities in Slovakia. Žilina is situated around 200 km from Bratislava, the capital of Slovakia.

Žilina is located in the valley of the Váh river, in the Žilina Basin, at the confluence of the Váh river with its tributaries Kysuca and Rajčanka. The Žilina Basin is surrounded by the mountain ranges

of Malá Fatra (Lesser Fatra), Strážovské vrchy (Strážov Hills), Súľovské vrchy (Súľov Hills), Javorníky and Kysucká vrchovina (Kysuce Highlands).

Žilina is a centre of significant political, cultural, sport and public health care institutions. The city of Žilina is the seat of the Žilina Region. Together with the Region, it keeps a stable position of the second or third place in gross domestic product per inhabitant. Its economic potential can be proven by the fact that Žilina has the biggest number of traders per thousand inhabitants. As for the number of joint stock companies and limited companies, Žilina keeps third position in Slovakia. The Slovak Commercial and Industrial Chamber in Žilina is the second biggest in Slovakia.

Nowadays, the city of Žilina represents a dynamic development accelerated by KIA Motors Slovakia investments. However, the City is not only a centre of car production, but together with the Upper Váh River Region (Horné Považie), it is an interesting tourist destination.

Interesting events held in the city of Žilina and its surroundings during the year (Carnival Slovakia, Central European Festival of Concert Art, Old Town Festival, Folklore Festival in Terchová, Medieval Day, Rajec Marathon etc.) make the development of the City tourism more dynamic.

The city of Žilina is a centre of theatres, museums, galleries, parks and sports facilities. Its historical centre is crossed by one of the longest and the most beautiful pedestrian zones in Slovakia.

