

The 27th International Conference on Information and Software Technologies (ICIST 2021) is taking place in Kaunas, Lithuania.

# **WELCOME**

The scientific conference programme includes three invited talks, a workshop and research paper presentations in parallel sessions. The conference papers present recent results as well as discuss research challenges, propose methodologies and describe new applications in four major areas that are covered during the conference, namely,

- Intelligent Methods for Data Analysis and Computer Aided Software Engineering,
- · Intelligent Systems and Software Engineering Advances,
- · Smart e-Learning Technologies and Applications,
- Language Technologies.

The papers on the aforementioned areas are further subdivided into four special sessions that are to be held at the conference:

- Special Session on Intelligent Methods for Data Analysis and Computer Aided Software Engineering;
- Special Session on Intelligent Systems and Software Engineering Advances;
- Special Session on Smart e-Learning Technologies and Applications;
- · Special Session on Language Technologies.

For the tenth time already, the Conference Proceedings are published by Springer as a part of *Communications in Computer and Information Science (CCIS)* series and will be referred in Clarivate Analytics.

The conference was made possible due to the support of the Faculty of Informatics, Kaunas University of Technology, and Research Council of Lithuania, whose contribution is gratefully acknowledged.

# **CHAIRS & COMMITTEE**

# **GENERAL CHAIR**

Rita Butkienė, Kaunas University of Technology, Lithuania

## PROGRAMME COMMITTEE CHAIR

Audrius Lopata, Kaunas University of Technology, Lithuania

#### SPECIAL SECTION CHAIRS

Audrius Lopata, Kaunas University of Technology, Lithuania
 Marcin Wozniak, Silesian University of Technology, Poland
 Danguolė Rutkauskienė, Kaunas University of Technology, Lithuania
 Jurgita Kapočiūtė-Dzikienė, Vytautas Magnus University, Lithuania

# LOCAL ORGANIZING COMMITTEE

Daina Gudonienė (Chair), Kaunas University of Technology, Lithuania Rita Butkienė, Kaunas University of Technology, Lithuania Audrius Lopata, Kaunas University of Technology, Lithuania Edgaras Dambrauskas, Kaunas University of Technology, Lithuania Romas Šleževičius, Kaunas University of Technology, Lithuania Lina Repšienė, Kaunas University of Technology, Lithuania Vilma Sukackė, Kaunas University of Technology, Lithuania Gintarė Lukoševičiūtė, Kaunas University of Technology, Lithuania

#### **SPONSORS**

Faculty of Informatics, Kaunas University of Technology

# **KEY NOTES & SPEAKERS**



# **MARTIN HAAGOORT (Data**

Scientist and CEO of Intellerts) studied econometrics at the Erasmus University of Rotterdam. Entrepreneur and Data Scientist, working over 30 years in the area of advanced analytics, at the cross point of technology, business, and data science. At the turn of the century, Martin developed ground-breaking algorithms in scoring web visitors for a large marketing firm. These models are still in use

and have formed the basis for their leadership position. Before starting Intellerts, he worked for Hewlett Packard in various executive roles. He has been managing large-scale analytical projects in Sales, Marketing, and Finance. Martin regularly publishes with regards to the practical challenges around AI and Data Science. Next to that, he provides masterclasses on the topic for industry leaders on how to apply AI and how to create new service offerings and new business models. Founder of Intellerts (www.intellerts.com), a Dutch/Lithuanian Data Science and AI company, and co-founder of DHealthIQ (www.dhealthiq.com) – a Digital Health company – developing Digital Therapeutics using Data Science and AI.

Artificial Intelligence for Finance – A Hyped Trend? Overpromising and Underdelivering? How to get on track for This Journey?

Thursday, October 14<sup>th</sup>, 10.00 – 11.00

- Where do we stand in the level of maturity of AI?
- What is the impact of AI on finance professionals?

What is ahead for Al implementations?

- How to accelerate the practical applications in finance?
  - What is the route to Date-Driven Enterprise?

strategic disinformation

campaigns. This talk looks

But essentially, they are only one part of a much

ndisputably) important tools for spreading hate, fakes, and disinformatior

larger problem, namely

at the evolution of social network technology, its misuse, and the struggle so

far to protect society from it.

Finally, we venture a (slightly speculative) look into the future and discuss what current regulatory efforts can do to deal with the problem, both technically and socially.

Disinformation, Social
Bots, and Social
Media
Friday, October 15th,
10.00 – 11.00
The first work on social bots
emerged about ten years
ago. Today, they are (almost

Perspectives on

echnical and Social

Assoc. Prof. Dr.-Ing. CHRISTIAN GRIMME is a computer and data scientist and heads the Social Media Analytics working group at the Data Science: Statistics & Optimization chair at the Institute of Business Informatics at the University of Münster. His research group investigates the automation of communication in social



networks, the technologies for implementing social bots, new methods for detecting these automata, as well as the generation and impact of artificial content. A particular focus is on the discovery, investigation, and classification of disinformation strategies. In doing so, Dr. Grimme conducts interdisciplinary research in close cooperation with colleagues in communication science, political science, journalism, and law. His research group is involved in various projects of the German Federal Ministry of Research, the European Union, and the state of North Rhine-Westphalia. Funded by the German Academic Exchange Service, the research group also cooperates with the University of Adelaide, Australia, to uncover virtual grassroots movements in the context of online disinformation. In cooperation with German security authorities, the research group assesses and combats automated disinformation in the context of democratic elections. Dr. Grimme has advised the German parliament (Bundestag) on the topic of social bots and he is a member of the Integrity & Security Initiative of the German government in Germany. Dr. Grimme is founder of the Multidisciplinary International Symposium on Disinformation in Online Media (MISDOOM), member of the steering group of the Algorithmization & Social Interaction Network, member of the European Research Center for Information Systems (ERCIS) with headquarters in Münster, and academic co-leader of the ERCIS Competence Center for Social Media Analytics.

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# **THURSDAY, OCTOBER 14th**

09.00 - 09.30 **REGISTRATION** 

1st floor reception of Santaka Valley

09.30 - 10.00 **OPENING CEREMONY** 

Assoc. Prof. Dr. Rita Butkienė.

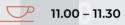
Kaunas University of Technology, Faculty of Informatics Prof. *Leonas Balaševičius*, Kaunas University of Technology Prof. Dr. *Audrius Lopata*, Kaunas University of Technology,

Faculty of Informatics

Big Hall of Santaka Valley

10.00 - 11.00 KEY NOTE

Data Scientist and the CEO of Intellerts Martin Haagoort
Artificial Intelligence for Finance – A Hyped Trend?
Overpromising and Underdelivering? How to get on
track for This Journey?
Big Hall of Santaka Valley



# 11.30 - 13.00 **SESSION 1**

# SOFTWARE ENGINEERING

Special Session on Intelligent Systems and Software

Engineering Advances (part 1)

Chaired by Assoc. Prof. Dr. *Marcin Wozniak Big Hall of Santaka Valley* 

1

Agile Infrastructure for Cloud-based

**Environments: A Review** 

Guillermo Rodriguez, Fabio Rocha, Dawitt Barbara, Igor Azevedo, Pablo M. Menezes, Sanjay Misra 2

Creating resilient supply chains with using blockchain technology and combining it with other technologies

Anna Maryniak, Monika Bal, Yuliia Bulhakova,

Włodzimierz Lewoniewski

> 3 **Defining Beneficiaries of Emerging Data Infrastructures Towards Effective Data** Appropriation - Insights from the Swedish Space Data Lab

Aya Rizk, Cathrine Seidelin, György Kovács, Marcus Liwicki, Rickard Brannvall

4 Design Workflows Graph **Schemes Correctness Proof in CAD Activity** 

Nikolay Voit, Semen Bochkov

5

# Financial Data Preprocessing Issues

Ilona Veitaitė, Audrius Lopata, Rimantas Butleris, Saulius Gudas, Vytautas Rudžionis, Kristina Rudžionienė, Liutauras Žioba, Darius Dilijonas, Evaldas Grišius, Maarten Zwitserloot

13.00 – 14.30



Restaurant "Profesorius" at Santaka Valley

14.30 - 16.00

#### **SESSION 2**

# SOFTWARE ENGINEERING

Special Session on Intelligent Systems and Software Engineering Advances (part 2)

Chaired by Assoc. Prof. Dr. Marcin Wozniak

Big Hall of Santaka Valley

Information technology of Decision-making Support on the Energy Management of Hybrid **Power Grid** 

Sergii Shendryk, Vira Shendryk, Sergii Tymchuk, Yuliia Parfenenko 2

Rule Driven Spreadsheet **Data Extraction from** Statistical Tables: Case Study

Viacheslav Paramonov. Alexey Shigarov, Varvara Vetrova

3 Semantic Interoperability of CV Builder: Problem and Practical Solutions

Svetlana Kubilinskiene, Valdona Judickaite-Zukovske, Tatjana Liogiene 4

Using Management
Transaction concepts to
ensure Business and EAS
alignment in an Agile
environment

Karolis Noreika, Saulius Gudas



15.30 - 16.00

16.00 - 17.30

## **SESSION 3**

BUSINESS INTELLIGENCE FOR INFORMATION AND SOFTWARE SYSTEMS

Special Session on Intelligent Methods for Data Analysis and Computer Aided Software Engineering (part 1)
Chaired by Assoc. Prof. Dr. Audrius Lopata
Big Hall of Santaka Valley

1

An Analysis of ED Line Algorithm in Urban Street-View Dataset

Ciprian Orhei, Muguras Mocofan, Silviu Vert, Radu Vasiu

2

Automated Nonlinked Two-Vehicle Towing System

Yaqin Wang, Matthew Viele, Anthony Smith, John Springer, Eric Matson

3

Automatic Programming Problem Difficulty Evaluation – First Results

Arturas Skarbalius, Mantas Lukoševičius 4

Blockchain Based Cryptocurrency Transaction Data and Balance Anonymity Improvement

Eligijus Sakalauskas, Aušrys Kilčiauskas

5

Cloud-based Cyber Incidents Response System and Software Tools

Sergiy Gnatyuk, Rat Berdibayev, Maksim Iavich, Zhadyra Avkurova

6

Efficient and Secure Digital Signature Scheme for Post Quantum Epoch

Maksim Iavich, Giorgi Iashvili, Avtandil Gagnidze, Razvan Bocu, Lela Mirtskhulava

# FRIDAY, OCTOBER 15th

09.30 - 10.00 **REGISTRATION** 

1st floor reception of Santaka Valley

10.00 - 11.00 KEY NOTE

Assoc. Prof. Dr.-Ing. *Christian Grimme Technical and Social Perspectives on* 

Disinformation, Social Bots, and Social Media

Big Hall of Santaka Valley



11.00 - 11.30

11.30 - 13.00 **SESSION 4** 

BUSINESS INTELLIGENCE FOR INFORMATION AND SOFTWARE SYSTEMS

Special Session on Intelligent Methods for Data Analysis and Computer Aided Software Engineering (part 2)

Chaired by Prof. Dr. *Audrius Lopata* 

Big Hall of Santaka Valley

I Investigation of Recurrent Neural Network Architectures for Prediction of Vessel Trajectory

Robertas Jurkus, Povilas Treigys, Julius Venskus

2 RTCAnalysis: Practical Modular Performance Analysis of Automotive Systems with RTC

Mahmoud Bazzal, Lukas Krawczyk, Carsten Wolff 3 Run-time Class Generation: Algorithms for Difference of Homogeneous and Inhomogeneous Classes

Dmytro Terletskyi

4
The applications of
Z-numbers in the Delphi
method

Arkadiusz Banasik, Marcin Lawnik

TMBuD: A dataset for urban scene building detection

Ciprian Orhei, Silviu Vert, Muguras Mocofan, Radu Vasiu

# 13.00 – 14.00



# Restaurant "Profesorius" at Santaka Valley

# 14.00 - 15.30

# **SESSION 5**

# INFORMATION TECHNOLOGY APPLICATIONS

Special Session on Language Technologies Chaired by Prof. Dr. Jurgita Kapočiūtė-Dzikienė Big Hall of Santaka Valley

1

**Generating Abstractive** Summaries of Lithuanian News Articles Using a Transformer Model

Lukas Stankevičius. Mantas Lukoševičius

2

How to Improve E-commerce Search **Engines?** Evaluating Transformer-based Named Entity Recognition on German Product Datasets

Sergei Denisov, Frederik Simon Bäumer 3

Rule-based Chatbot Integration into Software **Engineering Course** 

Mikas Binkis. Ramūnas Kubiliūnas. Rima Sturienė, Tatjana Dulinskienė, Tomas Blažauskas. Vitalija Jakštienė

4

Speech Synthesis Using Stressed Sample Labels for Languages with Higher **Degree of Phonemic Orthography** 

Arnas Radzevičius. Aistis Raudys, Pijus Kasparaitis



15.30 - 16.00

## 16.00 - 17.30

## **SESSION 6**

INFORMATION TECHNOLOGY APPLICATIONS Special Session on Smart e-Learning Technologies and Applications

Chaired by Prof. Dr. Danguolė Rutkauskienė Big Hall of Santaka Valley

1

A Complex Model Of Blended Learning: Using A Project Approach To Organize The **Educational Process** 

Anna Marchenko. Viktoriia Antypenko, Nataliia Fedotova. Yana Chybiriak, Svitlana Vashchenko, Alla Krasulia

2

An Engineering Solution for a Correlation between a Competences Framework and Learning Units in an **Educational Platform** 

Rita Butkiene, Daina Gudoniene. Evelina Staneviciene

3

**INGAME Design Framework** 

Daina Gudoniene. Tomas Blazauskas, Vitalija Kersiene, Valentina Zangrando 4

Initial Usability Evaluation of the DigiCulture Courses on **UniCampus** 

Silviu Vert, Oana Rotaru, Daniela Stoica, Diana Andone

Self-assessing Teachers' Competences for Curricula **Modernization Through MOOCs** 

Vlad Mihaescu. Rita Butkiene, Diana Andone, Cengiz Hakan Aydin, Carlos Vaz de Carvalho. Olga Zubikova, Elif Toprak, Evrim Genc-Kumtepe, Tim Brueggemann, Sonja Intveen

6 Visual Educational Simulator of Pandemic: Work in Progress

Pavel Boytchev, Svetla Bovtcheva

17.30 - 18.00

BEST PAPER AWARDS AND CLOSING THE CONFERENCE

Awarded by Prof. Dr. Audrius Lopata

Big Hall of Santaka Valley



## SESSION. CREATING TALENTS IN SOFTWARE ENGINEERING

09.00 - 09.30 **REGISTRATION** 

1st floor reception of Santaka Valley

09.30 - 09.40 WELCOME WORDS

Paulius Nezabitauskas, director Kaunas Science and Technology Park

09.40 – 10.00 SoftAware: International Cooperation in the Fields of
Higher Education for Developing Software Talents

*Živilė Paužaitė*, Head of Quality, Kaunas Science and Technology Park

2nd Floor / Conference Room No. 3

10.00 – 10.20 Interactive Games for Teaching and Learning

**Software Processes** 

Rasa Mažutienė, Director of Quality Assurance, JSC Juvare

2nd Floor / Conference Room No. 3

10.20 – 10.40 Important Soft Skills for Software Companies

Gintarė Dzindzelėtaitė, Social Project Manager, JSC Devbrigde

2nd Floor / Conference Room No. 3

10.40 – 11.00 The Stakeholders Involvement Into Responsible Education

Dr. *Jurgita Barynienė*, Lecturer, Coordinator of Faculty Development of EDU\_Lab Centre for Excellence in Teaching and Learning, Kaunas

University of Technology;

Dr. **Asta Daunorienė**, Assoc. Professor, Head of EDU\_Lab Centre for Excellence in Teaching and Learning, Kaunas University of Technology;

Živilė Paužaitė, Head of Quality, Kaunas Science and Technology Park

2nd Floor / Conference Room No. 3

11.00 – 11.20 Change of Students' Attitudes and Expectations on their Learning during Pandemic

Neringa Dubauskienė, Lecturer, Kaunas University of Technology;

Dr. V. Kumpikaitė-Valiūnienė, Professor, Kaunas University of Technology;

Dr. J. Vasauskaitė, Assoc. Professor, Kaunas University of Technology;

Dr. A. Daunorienė, Assoc. Professor, Kaunas University of Technology;

Dr. J. Barynienė, Lecturer, Kaunas University of Technology;

V. Jakštienė, Lecturer, Kaunas University of Technology;

Dr. V. Malinauskienė, Lecturer, Kaunas University of Technology

2nd Floor / Conference Room No. 3

11.20 - 11.40Testing Results of the Softaware Open Online Courses Dr. Tomas Blažauskas. Professor. Kaunas University of Technology 2nd Floor / Conference Room No. 3 11.40 - 11.50DISCUSSIONS 11.50 - 12.10Virtual Reality for Educational Videos Dr. Tomas Blažauskas, Professor, Kaunas University of Technology Lukas Paulauskas, Software Engineer, Lectures, Kaunas University of Technology Technology Demonstration Centre, I floor 12.10 - 12.40Virtual Reality for Educational Videos Live demonstration by representatives of the Virtual reality Lab, VRLab, Faculty of Informatics, Kaunas University of Technology Technology Demonstration Centre, I floor Restaurant "Profesorius" at 12.40 – 13.30 Santaka Vallev 13.30 - 13.50 Software Design Patterns – Coding Katas Dr. Catarina Isabel Ferreira Viveiros Tavares Reis, Lecturer, the School of Technology and Management (ESTG) of the Polytechnic of Leiria 2nd Floor / Conference Room No. 3 13.50 - 14.10How to Build an Interactive Video Presentation with a Chatbot?: Tips and Tricks Mikas Binkis, Lecturer, Kaunas University of Technology 2nd Floor / Conference Room No. 3 14.10 - 14.30 Visualisation of Data Structures and Algorithms Cenker Canbulut, Lecturer, Kaunas University of Technology

14.30 – 14.45 **DISCUSSIONS** 

Session is organised within the framework of the Erasmus + project "SoftAware" (No. 2019-1-BG01-KA203-062553) in cooperation of two project partners: the Kaunas Science and Technology Park and Kaunas University of Technology Faculty of Informatics.

2nd Floor / Conference Room No. 3

# SATURDAY, OCTOBER 16th

09.00 - 09.30 **REGISTRATION** 

1st floor reception of Santaka Valley

09.30 – 16.30 DIGITAL TRANSFORMATION:
VIRTUAL OPEN INNOVATION LAB

The aim of the meeting is to discuss about a digital transformation curriculum for educators and suggest pedagogical strategies to higher education educators, managers in SMEs, and entrepreneurs to design or re-design learning programs to develop advanced digital skills and to present to SME the functionality of the VOIL lab.





Association Santakos slėnis (Santaka Valley) unites and integrates activities of the largest research, technology and study institutions of Kaunas: Kaunas University of Technology, Lithuanian University of Health Sciences, Lithuanian Energy Institute, Vytautas Magnus University, the Hospital of Lithuanian University

of Health Sciences Kauno Klinikos, Kaunas Science and Technology Park and business companies: Achema Group at the science and business valley "Santaka".

Association Santakos lėnis (Santaka Valley) unites and integrates activities of the largest research, technology and study institutions of Kaunas: Kaunas University of Technology, Lithuanian University of Health Sciences, Lithuanian Energy Institute, Vytautas Magnus University, the Hospital of



Lithuanian University of Health Sciences Kauno Klinikos, Kaunas Science and Technology Park and business companies: Achema Group at the science and business valley "Santaka". KTU Rector prof. Eugenijus Valatka is the president of Association Santakos slėnis.

The aim of this association is to carry out interdisciplinary scientific and applied research, to create proper conditions for high-quality research services for businesses, to coordinate technology development and its commercialization by helping to start-up and develop business companies, and to attract the necessary investment.



asociacija.santakos.slenis@gmail.com www.santakosslenis.lt

# ABOUT KAUNAS

Kaunas, second-largest Lithuania's city, which keeps the authentic spirit of the country's national character alive. The city is located at the confluence of the two largest Lithuanian rivers, surrounded by the hills and situated at the crossroads of the most important roads in Lithuania. Due to its





geographical position, today, Kaunas is Lithuania's most important center of communication.

It is a home of a variety of festivals & events, from operettas to modern dance, from classical music to Jazz. Kaunas was chosen as the European Capital of Culture 2022. And as a Capital of Culture 2022, Kaunas is changing: from the TEMPORARY CAPITAL to

CONTEMPORARY. The city is famous for its Interwar architecture which was awarded the European Heritage Label and is on its way to UNESCO. Kaunas is the only city in the world where so much of the style of the buildings has survived to the present day.

Kaunas is a colorful city, famous for its street art, with probably the only square in the world that you can't get into – George Maciunas square, inspired by FLUXUS movement.

Discover Kaunas as a great place for meetings, experience the city's unique ambience and get introduced to a number of modern conference facilities and quality services, along with exciting leisure activities. The unique atmosphere of Kaunas can be explored, which is distinguished by the





heritage of the painter and composer M. K. Čiurlionis. Kaunas is not only a city of old traditions but also a large centre of business and industry. It can also lay claim to being a city of young people with over 35,000 students (the largest number in Lithuania) studying at one of the seven universities here. For business and investors, our city offers a friendly, open, and creative space for partnerships and cooperation.

Green streets, tree-lined avenues and wide-open squares create surroundings to match everybody's moods. Kaunas is proud of its great number of museums, theatres, universities, colleges, fine hotels, restaurants, cafes and bars. Guests can try a range of cuisine from many European and Asian countries as well as an abundance of traditional Lithuanian food, drink and hospitality.

For more information about Kaunas please visit <a href="https://visit.kaunas.lt/en/">https://visit.kaunas.lt/en/</a>

# ABOUT KAUNAS UNIVERSITY OF TECHNOLOGY



Kaunas University of Technology, with its eight faculties, a branch in Panevėžys, high school (gymnasium), progymnasium and nine research centres, is the second-largest university in Lithuania. About 80% of Lithuania's industrial engineers have graduated from KTU. In 1990, KPI was restructured and brought into line with most Western universities.



Under Parliamentary decision, it was then granted its present university status and name. Now, Kaunas University of Technology is the largest technical university in Lithuania. More information about Kaunas University of Technology can be found at <a href="http://ktu.edu">http://ktu.edu</a>

# FACULTY OF INFORMATICS

The Faculty of Informatics of Kaunas University of Technology was established in 1977. The faculty currently consists of five departments:

Department of Multimedia Engineering,
Department of Information Systems,
Department of Computer Science,
Department of Software Engineering,
Department of Applied Informatics,

and two research centres:

Centre of Real Time Computer Systems, Centre of Information Systems Design Technology.





The faculty offers the choice of Informatics, Informatics Engineering, Multimedia Technologies, Information Systems, and Software Systems Bachelor degree programmes. Those pursuing a Master's degree can choose accordingly from five study programmes:

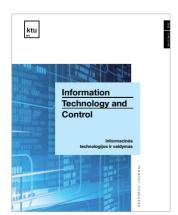
Informatics,
Information and Information Technology Security,
Information Systems Engineering.

Information Technologies of Distance Education,
Software Engineering.



Graduates of master's degree studies can pursue the academic career by choosing Informatics or Informatics Engineering doctoral studies.

Each year the Faculty of Informatics accepts around 500 new students seeking Bachelor's or Master's degree, respectively. In 2019, we have more than 2100 Bachelor, 190 Master, and 40 Doctoral students.



The Faculty also publishes a scientific journal,

# INFORMATION TECHNOLOGY AND CONTROL

(indexed by Clarivate Analytics)

www.itc.ktu.lt

itc@ktu.lt

# **USEFUL INFORMATION**

# Lithuanian Time

Lithuania is located in the Eastern European Time Zone, GMT+2.

Currency Euro (€).

# **Useful Phone Numbers**

Emergency call: 112 Information: 118

# Kaunas Airport

Information: (+370 6) 12 44442

#### Kaunas Bus Station

Information: (+370 37) 40 90 60

# Kaunas Railway Station

Information: (+370 5) 269 3636

Taxi in Kaunas









# CALL FOR PAPERS

28<sup>th</sup> International Conference on Information and Software Technologies

October 13<sup>th</sup> – 15<sup>th</sup>, 2022, Kaunas, Lithuania

# PROCEEDINGS AND PUBLICATION

The paper's size should be 10–12 pages (fee for extra pages is 10 EUR per page) in Springer Template. Accepted papers will be published as a volume of Springer-Verlag CCIS. CCIS is indexed in Scopus, Clarivate Analytics Web of Science.

# **LOCATION**

ICIST is organised by Kaunas University of Technology, a leading technical university of the Baltic States. In 2022, the conference will be organised in Kaunas, the second largest Lithuania's city, which keeps the authentic spirit of the country's national character alive.

# **ORGANIZATION**

PC Chair Audrius Lopata, Kaunas, Lithuania

Local Organising Committee Chair Daina Gudonienė, Kaunas, Lithuania

Local Organising Committee: icist@ktu.lt

#### **DEADLINES**

**18 03 2022** - Full paper submission.

15 04 2022 - Notification of acceptance.

17 06 2022 - Print ready paper submission.

13 10 2022 – 15 10 2022 – Conference. Research sessions.



The International Conference on Information and Software Technologies (ICIST) is an international annual event, organized by Kaunas University of Technology. In 2022, the University will organize the 28<sup>th</sup> ICIST Conference from 13<sup>th</sup> to 15<sup>th</sup> October in Kaunas, Lithuania.

# **SCOPE AND TOPICS**

# INFORMATION SYSTEMS

#### Special Sessions on

Innovative Applications for Knowledge Transfer Support;
 e-Health Information Systems;

Information Systems Development; Conceptual Modelling, Ontologies, and Databases; Business Processes and Business Rules; Enterprise Architecture and Enterprise Modelling; Distributed Information Systems and Semantic Web; Quality of Information Systems, Health Care Management Systems.

# BUSINESS INTELLIGENCE FOR INFORMATION AND SOFTWARE SYSTEMS

Special Session on

• Intelligent Methods for

Data Analysis and Computer-Aided Software Engineering

Data Mining and Knowledge Discovery;
Decision Support Systems;
Big Data Analytics; Expert Systems;

SOFTWARE ENGINEERING

Knowledge-Based System Engineering.

Intelligent Web Mining;

# 301 I WAILE LINGINELIKIING

Special Sessions on
Intelligent Systems and Software Engineering
Advances

Software and Systems Engineering Methodologies;
Model-Driven Development, SOA;
Component-Based Development;
Distributed, Mobile, and Open Architectures;
Cloud Computing Software Quality and Testing;
CASE Tools for Software Development;
Compitational Intelligence; Security and Trust.

# IT APPLICATIONS

Special Sessions on

Smart e-Learning Technologies and Applications;
 Digital Transformation;
 Language Technologies

STEAM Education; IT in Teaching and Learning; Internet of Things and Smart Environments; Wireless and Mobile Applications; Compiutional Linguistics; Learning Objects and MOOCs; Natural Language Processing; Computer Graphics and Multimedia.

More information and registration on http://icist.ktu.edu/

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