

DAMSS

DATA ANALYSIS
METHODS FOR SOFTWARE
SYSTEMS



14th Conference on

DATA ANALYSIS METHODS for Software Systems

November 30 – December 2, 2023

PROGRAM

Druskininkai, Lithuania, Hotel "Europa Royale"
<https://www.mii.lt/DAMSS>

Co-Chairmen:

Dr. Saulius Maskeliūnas (Lithuanian Computer Society)
Prof. Gintautas Dzemyda (Vilnius University, Lithuanian Academy of Sciences)

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Event Schedule

Thursday, November 30

11⁰⁰–13⁰⁰	Registration Info Desk
13⁰⁰–13³⁰	Opening, Welcome and Introductory Remarks
<i>Gintautas Dzemyda</i> “Data Analysis Methods for Software Systems” (Vilnius University)	
13³⁰–15⁰⁰	Plenary Session (Room A)
<i>Jan Flusser</i> “Visual Object Recognition - Traditional Methods Along With Deep Learning Approaches” (Institute of Information Theory and Automation, Czech Republic)	
<i>Eligius M.T. Hendrix</i> “On Computational Challenges in Value Iteration for Inventory Control” (University of Malaga, Spain)	

15 ⁰⁰ –15 ³⁰	Coffee break
15 ³⁰ –16 ³⁰	Oral Session (Room A)

1. **Mincong Tang** “Sentiment Analysis Based on User Charging Comments” (Xuzhou University of Technology, China)
2. **Jurgita Kapočiūtė-Dzikienė** “Large Language Models for Multilingual and Cross-Lingual Chatbot Communication” (UAB Tilde IT, Vytautas Magnus University)
3. **Justina Mandravickaitė, Danguolė Kalinauskaitė, Danguolė Kotryna Kapkan, Eglė Rimkienė, Tomas Krilavičius** “Automatic Simplification of Lithuanian Administrative Texts: Initial Experiments” (Vytautas Magnus University)

15 ³⁰ –16 ³⁰	Oral Session (Room C)
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1. **Ignacy Kaliszewski** “Assessment Functions Accounting for Attribute Balance” (Systems Research Institute of the Polish Academy of Sciences, Poland)
2. **Saulius Maskeliūnas** “Translation of ISO/IEC 22989:2022 “Artificial Intelligence Concepts and Terminology” Standard into Lithuanian” (Vilnius University)
3. **Gerda Ana Melnik-Leroy, Linas Aidokas, Gintautas Dzemyda, Giedrė Dzemydaitė, Virginijus Marcinkevičius, Danguolė Melnikienė, Vytautas Tiešis, Ana Usovaitė** “When Exponential Growth Bias Gets Worse: an Experiment With an Educational Intervention” (Vilnius University)

- ***Snieguolė Bagočienė, Anita Juškevičienė*** “Literature Review on Data Modelling Patterns and Techniques for Educational Data Assessment”
- ***Santa Bartuševica, Jurgis Škilters, Solvita Umbraško, Līga Zariņa, Laura Zeļģe, Agnese Anna Pasare, Ardis Platkājis, Jānis Mednieks, Aleksejs Ševčenko, Nauris Zdanovskis, Artūrs Šilovs, Edgars Naudiņš*** “Development of an Integrative Approach to the Assessment of Cognitive Abilities in Patients With Neurodegenerative Diseases of the Central Nervous System”
- ***Antanas Bendoraitis, Tomas Blažauskas, Eglė Butkevičiūtė*** “Comparison of Big Data Storage Solutions With the Hybrid Blockchain Architecture”
- ***Algirdas Benetis, Vytautas Valaitis*** “Similarity Metrics for Cartographic Sentinel-2 Multispectral Imagery Comparison”
- ***Dalia Breskuvienė, Gintautas Dzemyda*** “What Is a Concept Drift, and Does It Affect Machine Learning Performance?”
- ***Laurynas Buinauskas, Aušra Gadeikytė, Eglė Butkevičiūtė*** “Classification of Satellite Images to Create a Map of the Settlement Area”
- ***Arnoldas Budžys, Olga Kurasova, Viktor Medvedev*** “Insider Threat Detection: A New Keystroke Dynamics-Based Approach to User Authentication in Critical Infrastructure”
- ***Karina Čiurlienė*** “Adaptive Mapping of Cybersecurity Competence Assessment Methods”
- ***Juozas Dautartas, Arnoldas Budžys, Viktor Medvedev*** “Obfuscation and Evasion Techniques for Red Team Assessments”
- ***Martynas Dumpis, Dalius Navakauskas*** “Comparative Analysis of Eleven Dynamic Artificial Neural Networks”

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- *Rasa Erentaitė, Rimantas Vosylis, Daiva Sevalneva, Eglė Melnikė, Vaidas Morkevičius, Giedrius Žvaliauskas, Berita Simonaitienė, Monika Zdanavičiūtė, Anton Volčok, Tomas Krilavičius* “Development of the NO-GAP Educational Analytics Tool: Evaluating Disparities in Academic Achievements Among Lithuanian Students”
 - *Melita Frolovaitė, Elise Manon Marie Lebon, Tomas Ruzgas* “Evolutionary Model for Non-coding Nucleotide Sequences”
 - *Dace Šostaka, Juris Borzovs, Jānis Zuters* “Would It Be Possible to Optimise the Secondary ICT Term Creation in Latvian?”

18⁰⁰–19³⁰

Welcome Party

9⁰⁰–10⁰⁰	Plenary Session (Room A)
<p><i>Alfred Bruckstein</i> “An Overview of Holographic Data Representations” (Technion Israel Institute of Technology, Israel)</p> <p><i>Valentina E. Balas</i> “Empowering Industrial Control: Soft Computing Paradigms and Practical Applications” (Aurel Vlaicu University of Arad, Romania)</p>	
10⁰⁰–11⁰⁰	Oral Session (Room A)
<ol style="list-style-type: none"> 1. <i>Stefano Bonnini</i> “Nonparametric Tests on the Adequacy of Models for Count Data” (University of Ferrara, Italy) 2. <i>Jurgita Markevičiūtė, Zenonas Norkus</i> “Regional GDP Disparities in the Interwar Lithuania” (Vilnius University) 3. <i>Rokas Puišys, Jonas Šiaulys</i> “Survival With Random Effect” (Vilnius University) 	
10⁰⁰–11⁰⁰	Oral Session (Room C)
<ol style="list-style-type: none"> 1. <i>Olga Karelkina</i> “Loop Decomposition-Based Integer Programming Model for RNA Secondary Structure Prediction” (Systems Research Institute of the Polish Academy of Sciences, Poland) 2. <i>Marco Marcozzi, Ernestas Filatovas, Remigijus Paulavičius</i> “Cluster-Based Classification of Consensus Protocols for Decentralized Ledger Technology” (Vilnius University) 3. <i>Jan W. Owsiniński</i> “Back to the Roots: on the Use and Principles of Clustering under Various Circumstances” (Systems Research Institute of the Polish Academy of Sciences, Poland) 	

- **Ervinas Gisleris**, *Artūras Serackis* “Evaluating End-to-End and Multi-Stage 3D Model Generation With 3D Morphable Models: A Comparative Study on Eyeglasses Frames”
- *Gabrielė Jenciūtė, Gabrielė Kasputytė, Nerijus Šakinis, Paulius Savickas, Inesa Bunevičienė, Erika Korobeinikova, Domas Vaitiekus, Arturas Inčiūra, Laimonas Jaruševičius, Ričardas Krikštolaitis, Tomas Krilavičius, Elona Juozaitytė, Adomas Bunevičius* “The Use of Smartphone Data in Symptom Identification for Patients With Cancer”
- **Dominykas Kaminskas**, *Vytautas Valaitis* “Aerial Image Similarity Estimation Using Cloud Removal Methods”
- **Mindaugas Kepalas**, *Julius Žilinskas* “Minimum-Sum-Of-Squares Clustering With (Net) Constraints for Cluster-Centres”
- **Gintarė Klimantavičiūtė**, *Rūta Levulienė* “Comparative Analysis of Homogeneity Tests for Censored Samples Under Crossing of Survival Functions”
- **Rima Kriauzienė**, *Andrej Bugajev* “Constructing Production Planning Tasks: A Case Study of “Teltonika””
- **António Iglesias**, **Tatiana Tchemisova** “A Comparative Study of Mathematical Models for Aircraft Deconfliction Problem”
- **Algimantas Kriščiukaitis**, *Robertas Petrolis, Rugilė Dragunaitė, Rytis Stakaitis, Daina Skiriutė* “Challenges in the Next Generation (Oxford Nanopore) direct RNA Sequencing (dRNA-seq) Data Processing: Coping With Normalisation of Gene Expression Levels by Principal Component Analysis”
- *Lukas Kuzma, Martynas Sabaliauskas, Igoris Belovas* “Visualization of Zetabulbs: Mandelbulbs Associated With the Riemann Zeta Function”
- *Tautvydas Kvietkauskas, Ernest Pavlov, Pavel Stefanovič* “Efficiency of YOLOv5 Models in the Detection of Construction Details”

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- *Algirdas Lančinskas, Julius Žilinskas, Pascual Fernández, Blas Pelegrín* “Population-Based Algorithm for Discrete Facility Location With Ranking of Candidate Locations”
 - *Linus Litvinas* “A Hybrid of Bayesian-Based Global Search With Hooke–Jeeves Local Refinement for Multi-Objective Optimization Problems”
 - *Gita Maliukaitė, Mantas Vaitonis* “Cryptocurrency Price Prediction Model Development Using Machine Learning Algorithms”
 - *Karolina Mėlinytė-Ankudavičė, Marius Šukys, Gabrielė Kasputytė, Ričardas Krikštolaitis, Paulius Savickas, Eglė Ereminienė, Grytė Galnaitienė, Vaida Mizarienė, Gintarė Šakalytė, Tomas Krilavičius, Renaldas Jurkevičius* “Association of Genetic Variants With Myocardial Mechanics and Morphometry in Patients With Nonischemic Dilated Cardiomyopathy”
 - *Jolanta Miliauskaitė, Diana Kalibatiienė, Asta Slotkienė* “A Causality Space Model of the Web Service Quality Based on Fuzzy Theory”
 - *Gintautas Mozgeris, Arnas Matusevičius, Gabrielė Kasputytė, Ljusk Ola Eriksson, Tomas Krilavičius, Laimonas Butkus* “Development of a Modern Forest Decision Support System for Lithuania: Simulation or Optimisation?”
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11 ⁰⁰ –11 ²⁰	Coffee break
11 ²⁰ –12 ²⁰	Oral Session (Room A)
<ol style="list-style-type: none"> 1. <i>Alexei Iliasov, Dominic Taylor, Linas Laibinis, Alexander Romanovsky</i> “Automated Verification of Railway Signalling Data” (Vilnius University) 2. <i>Rūta Juozaitienė, Ernst C. Wit</i> “Modelling the Evolution of Relational Event Data” (Vytautas Magnus University, CARD) 3. <i>Simona Ramanauskaitė, Pavel Stefanovič, Antanas Čenys</i> “Tree Structure-Based Competencies Formalisation: Path Towards Alignment of Industry Needs, Person Competency Portfolio and Study Program Objectives” (Vilnius Gediminas Technical University) 	
11 ²⁰ –12 ²⁰	Oral Session (Room C)
<ol style="list-style-type: none"> 1. <i>Deividas Masaitis, Renaldas Urniežius, Arnas Survyla</i> “Bridging the Gap: Estimation of Soluble Compounds and Protein Concentrations in E. coli Bioprocesses” (Kaunas University of Technology) 2. <i>Alina Pūrienė, Paulius Raškevičius, Saulė Skinkytė, Lina Stangvaltaitė-Mouhat, Indrė Stankevičienė, Darius Padvelskis</i> “Effectiveness of Machine Learning Algorithms for the Detection of Soft Tissue Calcifications in Panoramic Radiographs” (Institute of Dentistry, Vilnius University) 3. <i>Vytautas Ostaševičius</i> “New Therapeutic Opportunities Discovered by Statistical Models and AI Algorithms” (Kaunas University of Technology) 	

- **Gajane Mikalkėnienė, Jolita Bernatavičienė** “Machine Learning Approaches for the Analysis of Functional Brain Connectivity Patterns in Depression”
- **Gediminas Navickas, Gražina Korvel** “UniDive – Universality, Diversity and Idiosyncrasy in Language Technology”
- **Ugnė Orinaitė, Minvydas Ragulskis** “Railway Track Vibration Analysis and Complexity Assessment Based on H-ranks”
- **Tomasz Piernicki, Gražina Korvel, Bożena Kostek** “Acquiring Knowledge for Mimicking Dysarthric Speech by Incorporating Its Features into Synthetic Speech”
- **Birutė Pluskuvienė, Urtė Radvilaitė, Pavel Stefanovič, Simona Ramanauskaitė** “Machine Learning-Based ChatGPT Usage Detection in Open-Ended Question Answers”
- **Olesia Pozdniakova, Dalius Mažeika** “Performance-Based SLO Recovery for Containerized Applications”
- **Edita Mažonienė, Mantas Kundrotas, Dmitrij Šešok** “Automatic Tumor Identification Using Deep Neural Network”
- **Jūratė Ragulskienė** “Hiding multiple images in coupled lattices of hyper fractional maps”
- **Justina Ramonaitė, Pooja Gore, Gražina Korvel, Gintautas Tamulevičius** “Investigation of Speech Signal Processing Parameters in Wave-U-Net Source Separation”
- **Laura Ringienė, Gabrielė Stupurienė, Rita Dukynaitė, Rimantas Želvyys, Audronė Jakaitienė** “Is a Decline in Reading Achievement Due to a Low Level of SES? Is It (Im)possible?”
- **Tomas Ruzgas, Kristina Pupalaigė** “Kernel Density Estimator by Minimizing Bias”
- **Darius Sabaliauskas, Jolanta Miliauskaitė** “Contemporary Approaches to Investment Portfolio Decision-Making”

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- *Virgilijus Sakalauskas, Dalia Krikščiūnienė* “Customer Segmentation for Personalised E-Commerce Advertising Campaigns”

12²⁰–12⁴⁰	DAMSS 2023 Photo
12⁴⁰–14⁰⁰	Lunch

14⁰⁰–15⁰⁰	Plenary Session (Room A)
	<p><i>Janusz Kacprzyk</i> “Towards Effective and Efficient AI-assisted/Enabled Decision Aid and Support Systems: A Challenge for the Human-AI Collaboration” (Polish Academy of Sciences, Poland)</p> <p><i>Álvaro Rocha</i> “A Health Data Analytics Maturity Model for Hospitals Information Systems” (University of Lisbon – ISEG, Portugal)</p>
15⁰⁰–15³⁰	Closing session, Coffee break
15³⁰–16⁴⁵	Oral Session (Room A)
	<ol style="list-style-type: none"> 1. <i>Giedrius Blažys</i> “Machine Learning Model Evaluation Bias using AB Tests in Marketplace Setting” (Vinted) 2. <i>Dovilė Kuizinienė, Tomas Krilavičius</i> “Balancing techniques influence in Financial distress detection” (Vytautas Magnus University) 3. <i>Antanas Čenys</i> “Target Program of the Lithuanian Science Council"Information Technologies for the Development of the Knowledge Society" (in Lithuanian)” (Research Council of Lithuania)
15³⁰–17³⁰	Poster Session (IV) (Room B)
	<ul style="list-style-type: none"> • <i>Asta Slotkienė, Augustas Mikulėnas</i> “Reinforcement Learning Based Model for Personalising the Picture Exchange Communication System” • <i>Milita Songailaitė, Justina Mandravickaitė, Justinas Juozas Dainauskas</i> “Using Deep Learning and Visual Analytics to Investigate Hate Speech Patterns in Lithuanian Politics” • <i>Milita Songailaitė, Justina Mandravickaitė, Eglė Rimkienė, Anton Volčok, Tomas Krilavičius</i> “Deep learning approaches to detect disinformation across news platforms and social media” • <i>Aušra Šubonienė, Olga Kurasova, Gintautas Dzemyda, Viktor Medvedev, Aistė Gulla, Artūras Samuilis, Džiugas Jagminas, Kęstutis Strupas</i> “Detection of Pancreatic Cancer on CT Images Using Pseudo-labelling Methods”

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- *Kristupas Takšelis, Liepa Bikulčienė, Eglė Butkevičiūtė* “Automated Hypertension Detection Using Convolutional Neural Networks”
 - *Steponas Tolomanovas, Jolita Bernatavičienė, Povilas Treigys* “Comparative Analysis of Clinical Decision Support Systems for Eye Fundus Images”
 - *Ilona Veitaitė, Audrius Lopata, Saulius Gudas* “Financial Data Anomaly Detection Through Behavioral Change Indicators”
 - *Julius Venskus, Robertas Jurkus, Povilas Treigys* “Confidence and Prediction Intervals Usage in Maritime Traffic Awareness Evaluation Using LSTM Deep Neural Networks”
 - *Akvilė Vitkauskaitė, Andrius Čiginas* “Evaluation of Consumer Confidence Indicators Using Social Media and Administrative Data”
 - *Eimantas Zaranka, Bohdan Zhyhun, Milita Songailaitė, Rūta Juozaitienė, Tomas Krilavičius* “Customer Churn Prediction in the Software as a Service Industry”
 - *Liga Zarina, Jurgis Škilters, Solvita Umbraško, Santa Bartušėvica* “Effects of Interface Layout Structure on Usability and Content Comprehension”
 - *Monika Zdanavičiūtė, Marco Scholtz, Kaat De Ridder, Tomas Krilavičius* “Examining the Link Between Intangible Cultural Heritage and Tourism through Correlational Analysis”
 - *Bohdan Zhyhun, Justina Mandravickaitė* “Development and Evaluation of a Tool for the Retrieval of Semantically Related Words for Lithuanian Language”

19⁰⁰–21⁰⁰

Dinner

10⁰⁰-12⁰⁰

General Discussion and Concluding Remarks

Round table discussion “High Institutions Joint RAD-Skills Dissemination Workshop”

11³⁰-18³⁰

Unlock Big Data Storytelling Skills in European University Students (collocated multiplier event for project 2021-1-SE01-KA220-HED-000032034)

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