LITHUANIAN COMPUTER SOCIETY
VILNIUS UNIVERSITY
INSTITUTE OF DATA SCIENCE AND DIGITAL TECHNOLOGIES
LITHUANIAN ACADEMY OF SCIENCES



13th Conference on

# DATA ANALYSIS METHODS FOR SOFTWARE SYSTEMS

## Program

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

**December 1 – 3, 2022**

| 11$^{00}$–13$^{00}$ | **Registration**<br>**Info Desk** |
|---|---|
| 13$^{00}$–13$^{30}$ | **Opening. Welcome and Introductory Remarks** |

*Gintautas Dzemyda* "Data Analysis Methods for Software Systems" (Vilnius University, Institute of Data Science and Digital Technologies)

| 13$^{30}$–15$^{00}$ | **Plenary Session** |
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*Konstantinos Diamantaras* "Natural Language Generation Problems" (International Hellenic University, Greece)

*Pasi Fränti* "Clustering Healthcare Data" (School of Computing, University of Eastern Finland)

| 15$^{00}$–15$^{30}$ | **Coffee break** |
|---|---|
| 15$^{30}$–16$^{30}$ | **Oral Session (Room A)** |

1. *Tjaša Heričko, Boštjan Šumak* "Using Domain-Specific Word Embeddings to Boost Keyword-Based Commit Classification" (University of Maribor)

2. *A. Kriščiukaitis, R. Petrolis, R. Paukštaitienė* "Challenges in Biomedical Signal and Image Analysis: Lessons Learned and Future Perspectives" (Lithuanian University of Health Sciences)

3. *Audris Mockus, Anna-Maria Nau* "ICPUTRD: Image Cloud Platform for Use in Tagging and Research on Decomposition" (Vilnius University, University of Tennessee)

| $15^{30}$–$17^{00}$ | **Poster Session (I) (Room B)** |
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- *L. Aidokas, G. Tamulevičius* "Lithuanian Speech in Humanoid Robots"

- *K. Bagdonas, A. Venčkauskas* "Application of Merkelized Abstract Syntax Trees to the Internet of Things Location-Based Cybersecurity Solutions"

- *V. Bejanyan, H. Astsatryan* "Exploring PGAS-based Gossiping Algorithms for Knödel Graphs" (online)

- *I. Belovas, M. Sabaliauskas, L. Kuzma* "Visualisation of 2D Fractal Structures Associated with the Riemann Zeta Function"

- *D. Breskuvienė; G. Dzemyda* "Autoencoder for Fraudulent Data Feature Engineering"

- *M. Briliauskas, V. Marcinkevičius* "Problems and Solutions of Autonomous Exploration of Unknown Indoor Environments for Micro Aerial Vehicles With Onboard Stereo Camera"

- *A. Budžys, O. Kurasova, V. Medvedev* "Intrusion Detection Based on Keystroke Biometrics and Siamese Neural Networks"

- *E. Butkevičiūtė, L. Bikulčienė, T. Blažauskas, A. Paulauskas* "Training System for Elite Athletes"

- *J. Černevičienė, A. Kabašinskas* "On Multi-Criteria Decision-Making Methods in Finance Using Explainable Artificial Intelligence"

- *K. Čiurlienė, D. Stankevičius* "Improving Network Intrusion Detection Applying Hybrid Machine Learning Algorithms"

- *B. Dapkūnas, R. Baronas, Ž. Ledas* "Influence of Oxygen Consumption Rate Modulation on Bacterial Pattern Formation Models"

- *M. Delianidi, K. Diamantaras, I. Moras* "Dynamic Knowledge PRediction And eduCaTIonal Content rEcommendation system – DK PRACTICE"

- ***N. Kwame Gyamfi;*** *N. Goranin; D. Ceponis; A. Čenys* "System Call-Based Malware Detection Using Hybrid ML Methods Trained on the AWSCTD Dataset"

- ***A. Gadeikytė,*** *R. Barauskas* "Computational Models of Heat and Mass Transfer in the Textile Structures"

- *D. Grendaitė,* ***L. Petkevičius*** "Algal Bloom Monitoring Using Multi-spectral Satellite Data"

- ***J. Miliauskaitė,*** *D. Kalibatienė* "Comparison of Fuzzy Sets Based on the Concept of Imprecision"

| $18^{00}$–$19^{30}$ | **Welcome Party** |
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| 9⁰⁰–10⁰⁰ | **Plenary Session** |
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*Eligius M.T. Hendrix* "On Global Optimization and Machine Learning" (University of Malaga, Spain)

*Dmitry Podkopaev* "Decision Support for Many-Objective Optimisation" (Systems Research Institute, Polish Academy of Sciences)

| 10⁰⁰–11⁰⁰ | **Oral Session (Room A)** |
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1. *Jurgita Markevičiūtė, Zenonas Norkus, Adomas Klimantas* "Latvia's Regional Disparities: Comparison of Interwar Period with Modern Latvia" (Vilnius University)

2. *E. Rebždys, S. Masteika, K. Driaunys* "Risks and Solutions of Bitcoin Instant Payments with Zero-Confirmations at Physical Points of Sale and Services" (Vilnius University)

3. *Audrius Kabašinskas, Miloš Kopa, Kristina Šutienė, Aušrinė Lakštutienė, Aidas Malakauskas* "Measurement of Performance of Lithuanian II Pillar Pension Funds Using Benchmark and Rolling Window Technique" (Kaunas University of Technology)

| $10^{00}$–$11^{00}$ | Poster Session (II) (Room B) |
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- *K. Jablonskaitė,* **T. Ruzgas** "Evolution of Nucleotide Sequences over Passing Time"

- **G. Jenciūtė**, *G. Kasputytė, A. Bunevičius, R. Bunevičius, Š. Bagdonas, J. Venius, T. Krilavičius* "Disease Trajectory Prediction among Cancer Patients"

- **R. Juozaitienė,** *E. C. Wit* "Detecting Drivers of First Invasions Using Relational Event Models"

- **E. Kankevičiūtė**, *M. Songailaitė, J. Mandravickaitė, D. Kalinauskaitė, T. Krilavičius* "Lithuanian Hate Speech Classification Using Deep Learning Methods"

- *G. Kasputytė,* **A. Matusevičius,** *T. Krilavičius* "Application of Machine Learning for Improving Contemporary ETA Forecasting"

- **M. Kepalas**, *J. Žilinskas* "Handling Two-Dimensional Net Constraint: Its Formulation in MIP Terms and Empirical Studies of Solvers"

- *G. Korvel,* **G. Tamulevičius,** *J. Devenson* "Speech Signal Enhancement for Audio Forensics: An Initial Study"

- **G. Korvel,** *A. Katsalis, K. Diamantaras* "Enrich Knowledge Graphs and Test Pre-trained Language Models in Graph2seq Tasks"

- *O. Kostyukova,* **T. Tchemisova** "Regularisation Algorithms for Conic and Copositive Programming Problems"

- **D. Krikščiūnienė**, *V. Sakalauskas, G. Romeika* "Conceptual Framework of Data Science for Good Squad"

- **D. Kuizinienė,** *T. Krilavičius* "Dimensionality Reduction for Financial Distress Detection"

- **A. Kurylets,** *N. Goranin* "Threat Modeling in RPA-Based Systems"

- **A. Lalayan,** *H. Astsatryan, G. Giuliani* "A Multi-objective Optimisation Algorithm for EO Data Processing Based on Dask Library" (online)

- *A. Lančinskas, J. Žilinskas, P. Fernández, B. Pelegrín* "Facility Location with Ranking of Location Candidates Using High-Performance Computing Systems"

- *M. Lukauskas, V. Pilinkienė, J. Bruneckienė, A. Stundžienė, A. Grybauskas, T. Ruzgas* "Big Data Processing System for Lithuania Economic Activity Nowcasting" (online)

- *M. Lukauskas, T. Ruzgas* "Data Clustering Based on the Modified Inversion Formula Density Estimation" (online)

| $11^{00}$–$11^{20}$ | **Coffee break** |
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| $11^{20}$–$12^{20}$ | **Oral Session (Room A)** |

1. *Jonas Šiaulys* "Discrete-Time Risk Models for Non-Life Insurance Business" (Vilnius University)
2. *Audronė Jakaitienė* "How Much Do We Collect and How Much Do We Use for Policy and Research? Education Data. Case of Lithuania" (Vilnius University)
3. *Vytautas Ostasevicius* "Digital Twins in Manufacturing" (Kaunas University of Technology)

| $11^{20}$–$12^{20}$ | **Poster Session (III) (Room B)** |

- *J. Gamper, A. Reklaitė, G. Blažys* "A generalised surrogate model selection method for surrogate metrics"

- *E. Filatovas, A. Igumenov, V. Medvedev, R. Paulavičius* "Transition from Proof-of-Work to Proof-of-Stake Blockchains: Why it Matters More Than Ever?"

- *J. Mandravickaitė, E. Kankevičiūtė, M. Songailaitė, B. Zhyhun, D. Kalinauskaitė, T. Krilavičius* "Towards Generation of Phishing Texts"

- *J. Matuzas, M. Šeputis* "Computer Vision for Used Car Parts Recognition"

- *D. Mažeika, E. K. Kazlauskas* "Extraction of Microservices from Monolithic Software Based on the Database Model"

- *M. Motiejauskas, G. Dzemyda* "On Recognising Emotion of Sadness in Images of a General Nature Using CNN" (online)

- *D. Navakauskas, J. Skirelis, E. Šabanovič, M. Kazlauskas, B. Levitas, I. Naidionova, M. Drozdov, A. Prisiažnyj, M. Kazharov* "Application of Convolutional Deep Neural Network for Human Detection in Through the Wall Radar Signals"

- *G. Navickas, G. A. Melnik-Leroy* "Evaluating Synthesised Speech: the Cognitive Approach"

- *K. Noreika, S. Gudas* "Agile Application Development Management Using Causal Knowledge"

- *M. Petkevičius, D. Vitkutė-Adžgauskienė* "Extrinsic Evaluation of Word Embedding Models Using Semisupervised NLP Tasks: the Case of Sentiment Analysis"

- *L. Ringienė, A. Jakaitienė* "EFECTAS: R Tool for International Large-Scale Assessment Data Analysis"

- *I. Rizgelienė, D. Plikynas* "Automated Propaganda Detection Using Deep Learning Methods: a Pilot Systematic Review Research"

- ***P. Savickas,*** *D. Kuizinienė, T. Krilavičius* "To Merge or not to Merge Datasets? What Do the Experiments Show?"

- ***R. Savukynas*** "Blockchain-Based Security Risk Assessment for Identification and Authentication Method of Internet of Things Objects"

- ***L. Stripinis,*** *R. Paulavičius, E. Filatovas* "A New Genetic Tourist Trip Design Algorithm for a Highly Personalised Globe-trot Traveling Experience"

- ***S. Virbukaitė,*** *J. Bernatavičienė* "Interpolation Methods Impact on Eye Fundus Optic Disc and Optic Cup Segmentation"

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| **12$^{20}$–12$^{40}$** | **DAMSS 2022 Photo** |
| **12$^{40}$–14$^{00}$** | **Lunch** |
| **14$^{00}$–15$^{00}$** | **Plenary Session** |

*Jevgenij Gamper* "A Deep Dive into Industry Inspired Research Questions: from Causal Inference and Machine Learning, to Complexity Science" (Vinted)

*Giovanna D'Inverno* "All for One and One for All: How to Assess Performance When there are Different Dimensions and Different Stakeholders' Priorities?" (University of Pisa, Italy)

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| **15$^{00}$–15$^{30}$** | **Closing session, Coffee break** |

| $15^{30}$–$17^{30}$ | **Poster Session (IV) (Room B)** |

- *L. Aslanyan*, *K. Gishyan, H. Sahakyan* "Target class classification recursion preliminaries" (online)

- *G. Korvel, P. Treigys, B. Kostek* "Evaluation of Measures Applied to Monitor the Lombard Speech Signal in the Presence of Noise"

- *U. Orinaitė, **J. Ragulskienė** "The 1D Wada Index for the Classification of Digital Images of Concrete Cracks"

- *L. Ringienė*, *S. Raižienė, I. Laukaitytė, A. Jakaitienė* "The relation of motivational constructs to reading achievement in EU countries from PISA2018"

- *A. Serackis, M. Jankauskas* "Exploring the Limits of Early Predictive Maintenance Applying Anomaly Detection Technique"

- *M. Songailaitė,* *T. Krilavičius* "Recommending Music Using Music Information Retrieval Methods and Deep Learning"

- *M. Songailaitė, **J. Mandravickaitė,** *V. Gvozdovaitė, D. Kalinauskaitė, T. Krilavičius* "Fabulator: A Synthetic Social Media Data Generator"

- *R. Surkant, J. Bernatavičienė, J. Markevičiūtė, I. Naruševičiūtė, M. Trakymas, P. Treigys* "Signal Relationship Analysis of Prostate mpMRI T2w, DCE, DWI Sequences for Cancer Localization"

- *R. Štrimaitis, P. Stefanovič, S. Ramanauskaitė, A. Slotkienė* "Company Recommendation Model: Empowering the Accounting System and Publicly Available Data"

- *G. Tamulevičius, N. Šiupšinskienė, M. Danilovaitė* "Acoustic Analysis of Pathologic Voice: What Is Done and What Is Next?"

- *V. Upman, N. Goranin; A. Čenys* "Convolutional Neural Network Approach for Anomaly-Based Intrusion Detection on IoT-Enabled Smart Space Orchestration System"

- ***M. Vaitonis,** K. Korovkinas* "High-Frequency Cryptocurrency Trading in the Face of Covid-19"

- ***A. Vaitulevičius,** J. Bernatavičienė, J. Markevičiūtė, I. Naruševičiūtė, M. Trakymas, P. Treigys* "Impact of Timestamp and Segmentation Map Selection for Cancerous Prostate Regions in DCE MRI Classification"

- ***V. Veikutis,** A. Bubulis, V. Jurenas, J. Vezys, A. Skaudickas, R. Janavicius* "Evaluation of Pjezoelectric Bending Actuator-Based Ultrasonic Action to Human Blood Circulatory System Functional Status"

- ***J. Venskus,** A. Brandišauskienė* "Development of NLP and LSTM Networks for Recommendation of Informal Education"

- ***D. Vereškaitė,** R. Leipus* "Asymmetric Univariate and Multivariate Financial Time Series Models and Their Applications"

- ***M. Zdanavičiūtė,** T. Krilavičius* "Optimisation of Electric Vehicles Charging Station"

- ***T. Žvirblis,** L. Petkevičius, D. Bzinkowski, M. Rucki, A. Kilikevičius* "Classification of Industrial Conveyor Load Status Using Rubber Belt Tension and Deep Learning Models"

| $19^{00}$–$21^{00}$ | **Dinner** |
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# Event Schedule
## Saturday, December 3

| 10$^{00}$–12$^{00}$ | General Discussion and Concluding Remarks |
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| | *Round table discussion* |

## Partner



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