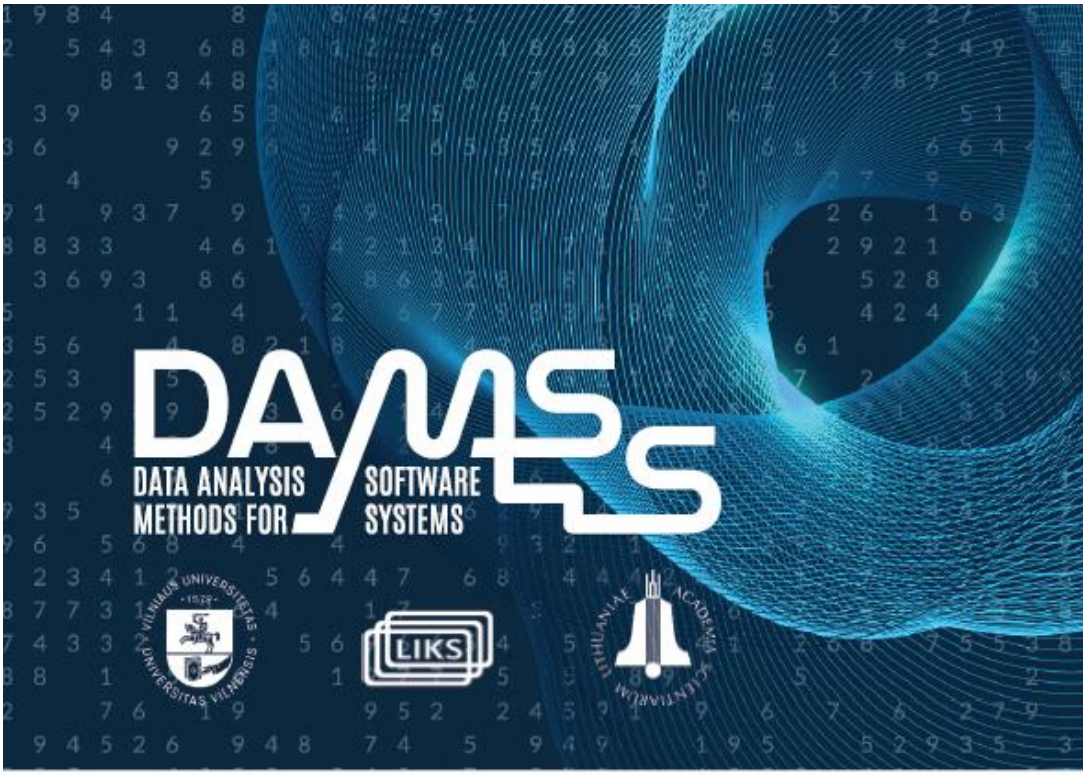

15th Conference on

DATA ANALYSIS METHODS for Software Systems

November 28–30, 2024

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

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Event Schedule

Thursday, November 28

11^{00}–13^{00}	**Registration** **Info Desk**
13^{00}–13^{30}	**Opening. Welcome and Introductory Remarks**

Gintautas Dzemyda "Data Analysis Methods for Software Systems" (Vilnius University)

13^{30}–14^{30}	**Plenary Session (Room A)**

Bożena Kostek "Perception-Driven Augmented Reality and Its Role in Machine Learning" (Gdansk University of Technology, Poland)

Boris Delibašić "From Data Science to Decision Support and Back!" (University of Belgrade, Serbia)

14^{30}–15^{30}	**Poster Session (I) (Room B)**

1. ***Simran Kaur Hora,*** *Antanas Čenys, Nikolaj Goranin* "Advanced Ensemble Techniques for IoT Cybersecurity: A Performance Comparison on the CICIoT2023 Dataset"
2. ***Mindaugas Jankauskas,*** *Artūras Serackis* "Integration of Wind Power Generation and Nord Pool Electricity Market Data"
3. ***Julius Jancevičius,*** *Diana Kalibatienė* "Application of Image Recognition Methods to Determine Land Use Classes: Lithuanian Case Study"
4. ***Oskaras Klimašauskas*** "Applying Reinforcement Learning to Successfully Drive a Car Around a Track"
5. ***Dalia Kriksciuniene,*** *Virgilijus Sakalauskas* "Evaluating ML Binary Classification for Predicting Stroke-Related Mortality"
6. ***Dalius Matuzevičius,*** *Henrikas Giedra* "Benchmarking Synthetic Data Generation Approaches for Eyeglasses Detection Algorithms Development"
7. ***Darius Sabaliauskas*** "Analysis of the Concept of Reasoning"
8. *Milita Songailaitė, Justina Mandravickaitė,* ***Eglė Rimkienė****, Mindaugas Petkevičius, Eimantas Zaranka, Tomas Krilavičius* "Hate Speech Detection for Lithuanian Language"
9. ***Dace Šostaka****, Kārlis Sondors, Juris Borzovs, Jānis Zuters* "Information Retrieval Tool for Secondary Term Creating: Preliminary Results"
10. *Mantas Šutas,* ***Eimutis Karčiauskas****, Eglė Butkevičiūtė* "Automated Coin Classification Using Transformer-Based Deep Learning Models"
11. ***Dominykas Vilčinskas,*** *Lukas Voveris, Jolita Bernatavičienė* "Fault Detection In Solar Power Plants Using Energy Production Data"
12. ***Gabriela Vdoviak****, Tomyslav Sledevič* "Enhancing Keypoint Detection in Thermal Images through Loss Function Optimisation and Model Evaluation"

13. ***Dovydas Marius Zapkus,*** *Asta Slotkienė* "Quality Assessment of LLM Models Generated Unit Tests: Quality Metrics Completeness from Code-Aware Perspective"
14. *Rytis Petrauskas****, Renaldas Urniezius****, Karolis Mickevicius, Ignas Kristutis, Paulius Obolevicius* "The Hybrid Model Optimization of the Chiller Infrastructure and Its Preliminary Experimental Results"
15. ***Eimantas Zaranka,*** *Dovilė Kuizinienė, Tomas Krilavičius* "Application of Machine Learning Techniques for Lithuanian Enterprise Clustering"

15^{00}–15^{30}	**Coffee Break**

15^{30}–16^{30}	**Parallel Oral Session (Room A)**

1. ***Janusz Kacprzyk*** "Towards AI-assisted/Powered Smart Environments: from Techno-Centric to Human-Centric and Value-Centric Approaches" (Systems Research Institute of the Polish Academy of Sciences, Poland)
2. ***Elijah Liflyand*** "Certain Computational Aspects in Approximation and Harmonic Analysis" (Bar-Ilan University, Israel)

15^{30}–16^{30}	**Parallel Oral Session (Room C)**

1. ***Arnoldas Budžys,*** *Viktor Medvedev, Olga Kurasova* "Enhancing Cybersecurity Using Keystroke Dynamics and Data Fusion Techniques" (Vilnius University)
2. ***Virgilijus Krinickij,*** *Linas Bukauskas* "Evidence-based Network Flow Modelling and Assessment for Cyber Security" (Vilnius University)

   Juozas Dautartas*, Arnoldas Budžys, Haroldas Jomantas, Olga Kurasova, Viktor Medvedev* "Red Team Tactics Against Malware Detection Using Adversarial Attacks" (Vilnius University)

15^{30}–16^{30}	**Parallel Oral Session (Room D)**

1. ***Rūta Juozaitienė,*** *Ernst-Jan Camiel Wit* "It's About Time: Revisiting Reciprocity and Triadicity in Relational Event Analysis" (Vytautas Magnus University)
2. ***Iulia Igescu*** "Tracking Equilibrium Departures in Output with O-F SVM and Soft Data" (National Bank of Romania, Romania)
3. ***Rokas Gipiškis,*** *Olga Kurasova* "Investigating Post-hoc Explainability Techniques for Image Segmentation" (Vilnius University)

16^{30}–18^{00}	**Poster Session (II) (Room B)**

1. ***Danylo Abramov****, Eimantas Zaranka, Monika Zdanavičiūtė, Nerijus Šakinis, Tomas Krilavičius* "Order in Document Chaos: Logistics Documents Classification"
2. ***Linas Aidokas*** "The Potential of Humanoid Robots for Children with Autism Spectrum Disorders: a Preliminary Study"
3. ***Kazimieras Bagdonas,*** *Kajus Černiauskas, Dainius Kirsnauskas, Justinas Teselis, Vladyslav Levchenko, Mantvydas Deltuva, Ignas Sabaliauskas* "KATH: A Comprehensive Platform for Integrating DNA Analysis Tools, Genetic Databases, and Open-Data Standards in Genetic Research"
4. ***Romas Baronas,*** *Boleslovas Dapkūnas, Remigijus Šimkus* "Self-Organization of Bacterial and Human Populations: Same Model, Different Scale"
5. ***Dalia Breskuvienė****, Gintautas Dzemyda* "Highly Imbalanced Data Case: Pattern-Guided Feature Selection to Detect Financial Fraud"
6. ***Veronika Bryskina****, Bohdan Zhyhun, Paulius Savickas, Milita Songailaitė, Tomas Krilavičius* "DisinfoDetect: A Dashboard-Driven Solution for Identifying Misinformation in Media"
7. ***Gabrielė Dargė****, Gabrielė Kasputytė, Ričardas Krikštolaitis, Tomas Krilavičius, Dovilė Kuizinienė, Adomas Bunevičius* "Leveraging Phone Sensors for Early Detection of Symptom Changes in Cancer Patients"
8. ***Sobia Dastgeer****, Povilas Treigys* "Transforming Black-Box Models into Explainable AI for Breast Cancer Recognition"
9. ***Urtė Deinoravičiūtė****, Jurgita Markevičiūtė, Povilas Treigys* "Cointegration of Functional Time Series"
10. ***Martynas Dumpis****, Dalius Navakauskas* "Case Study on Small-Scale Dynamic Neural Networks Explainability"
11. ***Karina Čiurlienė*** "Analysis of Event and Human Factor-Based Decision-Making in Cybersecurity Exercises Using MCDM"

12. ***Henrikas Giedra****, Dalius Matuzevičius* "Optimising Deep Vision Models for Eyeglasses Detection in Low-Power Devices"
13. ***Uladzislau Hadalau*** "Classification of Cardiovascular Diseases Using Machine Learning Methods and PQRST Intervals Segmentation of Electrocardiogram Records from Holter Monitoring"
14. ***Viroslava Kapustynska****, Vytautas Abromavičius, Artūras Serackis, Šarūnas Paulikas, Kristina Ryliškienė, Saulius Andruškevičius* "Detecting Pre-Migraine Night Patterns with Wearable Biosensors and Machine Learning"
15. ***Faustas Žiliajevas****, Justina Ramonaitė, Daniel Zakševski, Gražina Korvel*, *Gintautas Tamulevičius* "Noise Dataset for Deep Learning-Based Speech Enhancement"
16. ***Aidas Žygas****, Gražina Korvel* "An Overview of the Machine Learning Algorithms Used for Music Source Separation"

19^{00}–20^{30}	**Welcome Party (Hotel Restaurant)**

Event Schedule
Friday, November 29

9^{00}–10^{00}	**Plenary Session (Room A)**

Chih-Kuang Yeh "Trapping and Manipulating Drug-loaded Microbubbles by Acoustic Vortex Tweezers" (National Tsing Hua University, Taiwan)

Sanda Martinčić-Ipšić "From Text to Insight: Enhancing Relation Extraction in Climate Change Research" (University of Rijeka, Croatia)

10^{00}–11^{00}	**Parallel Oral Session (Room A)**

1. ***Justina Mandravickaitė,*** *Eglė Rimkienė, Danguolė Kotryna Kapkan, Danguolė Kalinauskaitė* "On the Road to the Automatic Text Simplification for Lithuanian" (Vytautas Magnus University)
2. ***Ernestas Serkovas*** "Access Control Approach in Microservices Architecture" (Kaunas University of Technology)
3. ***Laura Maria Donaire****, Gloria Ortega, Francisco Orts , Ester Martín Garzón, Ernestas Filatovas* "Quantum Machine Learning for Liver Disease Prediction" (University of Almería, Spain)

10^{00}–11^{00}	**Parallel Oral Session (Room C)**

1. ***Milita Songailaitė,*** *Tomas Krilavičius* "Analysing and Identifying Disinformation in Lithuania Using Graph Kernels" (Vytautas Magnus University)
2. ***Stefano Sanfilippo****, Lorenzo Farina; Pietro De Vito, Mattia Repossi, José Juan Hernández-Cabrera, José Évora-Gomez, José Juan Hernández Gálvez, Anna Bolognesi, Daniele Domanin* "An Agent Based Simulation and Optimization Model for Minimizing Costs of Renewable Energy Communities" (STAM S.r.l, Italy)
3. ***Simona Ramanauskaitė****, Eglė Baradinskienė, Cristina Ionela Bulat, Umberto Morelli* "Automated Course Similarity Estimation, Based on Course Syllabi" (Vilnius Gediminas Technical University)

11^{00}–11^{20}	**Coffee Break**

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

1. *Kęstutis Girnius,* ***Aušra Gadeikytė,*** *Eglė Butkevičiūtė* "Enhancing 3D Map Generation from Satellite Imagery Using R-CNN"
2. *Vytautas Kiudelis, Robertas Petrolis, Rima Ramonaitė, Dainius Jančiauskas, Juozas Kupčinskas, Povilas Šabanas***, *** ***Algimantas Kriščiukaitis*** "Identification of Key Areas in Histology Images for Detection of Collagenous Colitis: A Deep Learning Approach"
3. ***Kürşat Kömürcü,*** *Linas Petkevičius* "Change Detection in Satellite Imagery Using Transformer Models and Machine Learning Techniques: a Comprehensive Captioning Dataset"
4. ***Eduardas Kutka****, Jolita Bernatavičienė* "High-Performance Computing in Science"
5. ***Algirdas Lančinskas****, Pascual Fernández, Julius Žilinskas* "Robust Facility Location Under Uncertainty in Customer Behavior"
6. ***Mindaugas Mačernis****, Goda Bankovskaitė, Jonas Franukevičius, Darius Abramavicius* "Spectral and Molecular Dynamics Studies of Carotenoids and Stilbene in Complex Systems for Supercomputing"
7. ***Arnas Matusevičius****, Gabrielė Kasputytė, Anton Volčok, Martynas Narmontas, Gintautas Mozgeris, Ljusk Ola Eriksson, Tomas Krilavičius* "Adapting AI and Tree Growth Models for Sustainable Forestry in Lithuania"
8. *Kęstutis Pakrijauskas*, ***Dalius Mažeika*** "Increasing Availability of Low Latency Stateful Microservices"
9. *Jolanta Miliauskaitė,* ***Diana Kalibatienė****, Asta Slotkienė* "The Rapid Application Development (RAD) in Digital Transformation Era"
10. ***Tautvydas Naudžiūnas****, Guoda Perminaitė, Povilas Treigys* "Exploring Techniques for Diffraction Ring Detection in Molecular Research"

11. ***Jonas Mindaugas Rimšelis****, Gajane Mikalkėnienė, Jolita Bernatavičienė* "Comparative Evaluation of Adjacency Matrix Applications for EEG Signal Classification Tasks"
12. ***Tatiana Tchemisova,*** *Adam Nowak, Anna Laska-Leśniewicz, Tomasz Kopczyński, Jacek Stańdo, Nina Szczygie, Ana Breda, Beatrix Bačová, Mária Kúdelčíková, Michaela Holešová* "Virtual Reality Meets Mathematics: Innovative Teaching Modules for Geometry. Challenges and Results of the Math3DgeoVR Project"
13. ***Jolanta Miliauskaitė****, Asta Slotkienė, Luis Mendes Gomes* "Social Factors Affecting Internal Stakeholders' Perceptions of Software Product Quality Characteristics"
14. ***Brendonas Stakauskas****, Virginijus Marcinkevičius* "Visualising SARS-CoV-2 Phylogenetic Relationships Using Protein Language Models"
15. ***Stepas Toliautas,*** *Delianas Palinauskas, Laura Baliulytė, Darius Abramavičius* "Looking for Simplified Molecular Reaction Coordinates from Computation Data"
16. ***Daniel Zakševski,*** *Gintautas Tamulevičius* "Are We Able to Model the Human Auditory System in Speech Signal Enhancement?"

12^{20}–12^{40}	**DAMSS 2024 Photo**
12^{40}–14^{00}	**Lunch (Hotel Restaurant)**

14^{00}–15^{30}	**Plenary Session (Room A)**

Andrius Januta "Adversarial Attacks on AI: Understanding and Securing Machine Learning in Cybersecurity" (Nord Security, Lithuania)

Dmitri E. Kvasov "Advanced Global Optimization Techniques and Their Applications" (University of Calabria, Italy)

Rajesh Sharma "Social Media Analytics for Making Online Platforms Safer!" (University of Tartu, Estonia; IIT Delhi Insititute, India)

15^{30}–16^{00}	**Coffee Break**
16^{00}–16^{50}	**Discussion Session: Science in Business (Room A)**

Artsem Varyvoda "Tech and Environment: Linking SQL and DB Performance with CO2 Emissions Control" (EPAM)

Vytas Mulevičius "Advancing NLP for Lithuanian Language at Neurotechnology" (Neurotechnology)

16^{50}–17^{00}	**Closing Session (Room A)**

17^{00}–18^{00}	**Poster Session (IV) (Room B)**

1. ***Beata Gancevska****, Simona Ramanauskaitė* "Analysis of Blended Course Quality Metrics: Research, University and Student Perspectives"
2. ***Javier Navarro****, Gloria Ortega, Ester Martín Garzón, Antonio Manuel Puertas* "CUDA Implementations for the Acceleration of Microrheology Models"
3. ***Gediminas Navickas****, Gailius Raškinis, Danguolė Mikulėnienė, Vytautas Kardelis, Indrė Makauskaitė, Pijus Kasparaitis, Margarita Beniušė, Laimonas Vėbra, Steponas Tolomanovas, Asta Kazlauskienė, Saulė Milčiuvienė, Gražina Korvel* "Development of a Large Lithuanian Speech Corpus for Speech Recognition, Artificial Intelligence, and Other Innovative Language Technologies"
4. ***Linas Petkevičius*** "Multi-Source Data Merging of Orthoimagery and Satellite Imagery for Deep Learning"
5. *Algirdas Pocius,* ***Tomas Blažauskas****, Eglė Butkevičiūtė* "Voxel-Based 3D Object Generation from Single Images Using an Enhanced Deep Learning Architecture"
6. ***Sergej Pokusajev****, Pavel Stefanovič* "The Analysis of ChatGPT Efficiency for Context Extraction Using Lithuanian News Multi-label Text Dataset"
7. *Urtė Radvilaitė,* ***Birutė Pliuskuvienė****, Pavel Stefanovič, Simona Ramanauskaitė* "Peculiarities of GenAI Usage in Higher Education: Possibilities and Additional Challenges"
8. ***Jūratė Ragulskienė****, Kęstutis Pilkauskas, Paulius Palevičius* "The Elastic Slit Membrane: The Concept and the Target Transient Modes"
9. ***Martynas Sabaliauskas****, Igoris Belovas, Rugilė Čepaitytė* "Exploring the Distribution of Zeros of the Prime Zeta Function: New Insights Through 3D Visualization and Statistical Analysis"
10. ***Stefano Sanfilippo****, José Juan Hernández Gálvez, Christoph Kändler, José Juan Hernández-Cabrera, José Évora-Gomez,*

	Octavio Roncal Andrés "A Neural Network for Electricity Demand Modeling: El Espino Case"
	11. ***Rokas Štrimaitis,*** *Simona Ramanauskaitė, Pavel Stefanovič* "The Analysis of Synthetic Data Application Peculiarities on Time-Series Forecast Model Selection"
	12. ***Tadas Telksnys****, Inga Telksnienė, Romas Marcinkevičius, Zenonas Navickas, Minvydas Ragulskis* "Constructing Solitary Solutions to Nonlinear Differential Equations Using AI-Assisted Differentiation Operators"
	13. ***Justas Trinkūnas****, Roma Puronaitė, Laurent Jacotot, Mike Woodward, Mindaugas Morkūnas* "Information System Architecture of the Lithuanian National Biobanking Infrastructure"
	14. ***Ilona Veitaitė****, Audrius Lopata, Saulius Gudas* "Visual Representations in Financial Process Mining"
	15. ***Julius Venskus****, Robertas Jurkus, Povilas Treigys* "A Complex Network Approach to Marine Traffic Interaction Modeling: Feature Extraction for Real-Time Traffic Awareness"
	16. *Eimantas Zaranka,* ***Monika Zdanavičiūtė****, Tomas Krilavičius* "From Images to Smart Data: Digitization of Logistic Documents"
19^{00}–21^{00}	**Dinner (Hotel Restaurant)**

Event Schedule

Saturday, November 30

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

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