

10th International Workshop on
DATA ANALYSIS METHODS FOR SOFTWARE SYSTEMS



Event Schedule
Thursday, November 29

11 ⁰⁰ –13 ⁰⁰	Registration Info Desk
13 ⁰⁰ –13 ¹⁵	Opening. Welcome and Introductory Remarks <i>Gintautas Dzemyda</i> “Data Analysis Methods for Software Systems” (Vilnius University, Institute of Data Science and Digital Technologies)
13 ¹⁵ –14 ¹⁵	Plenary Session <i>Janusz Kacprzyk</i> “Decisions in Human Centric Multiagent Systems: Rationality and Some Cognitive Biases” (Polish Academy of Sciences, Poland) <i>Ester Martín Garzón</i> “High Performance Computing: Platforms and Techniques” (University of Almería, Spain)
14 ¹⁵ –15 ⁰⁰	Coffee Poster Session (1), Discussions
15 ⁰⁰ –16 ⁰⁰	Plenary Session <i>Florin Gheorghe Filip</i> “DSS – An Evolving Class of Information Systems” (Romanian Academy, Romania) <i>Ana Camanho, M. C. Silva, F. Barbosa</i> “Benchmarking Secondary Schools Using Students’ Results at University” (University of Porto, Portugal)
16 ⁰⁰ –17 ³⁰	Coffee Poster Session (2), Discussions
18 ⁰⁰ –19 ³⁰	Welcome Party

Poster Session (1), November 29

- *V. Abromavičius, A. Serackis* “Real-Time Identification of Ventricular Tachycardia Incident Using Multi-Modal Classifier”
 - *A. Adamonis, E. Filatovas, R. Paulavičius* “Multi-Platform Blockchain – Integration Between Blockchain’s”
 - *I. Bumbulienė, J. Mandravickaitė, L. Boizou, T. Krilavičius* “Colloc – A Toolset for Multiword Expressions Identification”
 - *M. Briedienė, T. Krilavičius* “Narrative Detection for Lithuanian Language”
 - *D. Dzemydienė, V. Radzevičius* “An Approach for Networking of Wireless Sensors and Embedded Systems Applied for Monitoring of Environment Data”
 - *K. Kąkol, G. Korvel, B. Kostek* “Analysis of Lombard speech using parameterization and the objective quality indicators in noise conditions”
 - *K. Korovkinas, G. Garšva* “Large Scale Sentiment Analysis Using NLP Based Feature Extraction Technique and PSOLinearSVM”
 - *G. Korvel, G. Tamulevičius, P. Treigys, J. Bernatavičienė, B. Kostek* “Investigating Feature Spaces for Isolated Word Recognition”
 - *A. Lančinskas, J. Žilinskas, P. Fernandez, B. Pelegrin* “Ranking-Based Algorithm for Discrete Facility Location”
 - *Z. Mahmood* “Computer Aided Design of Block Chain System and Effectiveness Analysis of Smart Systems for Information Integration”
 - *J. Mandravickaitė, T. Krilavičius* “Quantitative Indicators in the Analysis of Functional Styles”
 - *J.J. Moreno, J. Miroforidis, E. Filatovas, I. Kaliszewski, E.M. Garzón* “Accelerating the Dose Evaluation for Intensity Modulated Radiotherapy”
 - *D. Navakauskas, R. Martavičius, T. Sledevič, J. Skirelis, A. Melninkaitis, M. Ščiuka* “Smart System Prototype of Optical Resistance Testing for Laser Technology Sector”
 - *M. Petkevičius, D. Vitkutė-Adžgauskienė, D. Amilevičius* “Aspect-Based Sentiment Analysis with Word Embeddings for Lithuanian”
 - *S. Ramanauskaitė, A. Slotkiene* “Hierarchy Based Competences’ Analysis: Opportunities for Personalized E-Evaluation”
 - *V. Sakalauskas, M. Liutvinavicius, D. Kriksciuniene* “Multicriteria Decision Making Model for Anomaly Detection in Financial Markets”
 - *R. Savukynas, V. Marcinkevičius* “Blockchain Technology for Security and Privacy in Internet of Things”
 - *D. Skaudickas, A. Skaudickas, V. Veikutis* “Peculiarities of the Thermal Expression of Students' Feeds, Linking Them to the Consequences of Sport Traumatic Events”
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Poster Session (2), November 29

- **E. Arbataitis, D. Dzemydienė** “Application of Specific Business Rules in ERP System for Effective Manufacturing Process of Woven Fabrics”
- **J. Brusokas, L. Petkevičius** “Sublevel Structure Similarity Metric for X-Ray Images Comparison”
- **K. Ducinskas, L. Dreiziene** “Performance Evaluations for Supervised Classifiers of Gaussian Random Field Observations”
- **M. Heričko, A. Rajšp, T. Beranič** “Gamification for Engaging IT Students in the ERP Course: A Case Study”
- **A. Juškevičienė** “Algorithmic Thinking Through Computational Making”
- **P. Juszczuk, I. Kaliszewski, J. Miroforidis, D. Podkopaev** “Low-Cardinality Approximations of the Pareto Front in the Mean-Variance Portfolio Investment Problem with a Non-Risky Asset”
- **M. Karaliute, K. Dučinskas, L. Šaltytė-Vaisiauskė** “Expected Error Regret in Linear Discrimination of Balanced Spatial Gaussian Time Series”
- **Yu. Kharin, V. Voloshko** “Semibinomial Conditionally Nonlinear Autoregressive Time Series for Data Science”
- **R. Kriauzienė, A. Bugajev, R. Čiegis** “Three Level Parallelisation Scheme for Optimisation Problems Involving Simultaneous Calculations of Multiple Differential Equations”
- **A. Lopata, I. Veitaitė** “Knowledge-Based UML Models Transformation Algorithm”
- **J. Miliauskaitė, L. Paliulionienė** “Fuzzy Balancing in the Planning of the Quality of Enterprise Business Services”
- **F. Orts, G. Ortega, E. Filatovas, O. Kurasova, I. García, E.M. Garzón** “An Efficient Software for Hyperspectral Classification Using Isometric Mapping”
- **M. Ramanauskas, D. Šešok** “Distributed of Genetic Algorithm for Optimization of Piles”
- **M. Sabaliauskas, G. Dzemyda** “On the Visual Approach to Global Optimization for Multidimensional Scaling”
- **R. Semėnas** “Strategy Selection for Autonomous Robot Area Exploration by Multi-Criteria Decision Making Approach”
- **T. Sidekerskienė, R. Damaševičius, M. Wozniak** “Maximal Zerocross Density Decomposition: A Novel Signal Decomposition Method”
- **L. Stripinis, R. Paulavičius** “Improved DIRECT-Type Algorithm for Constrained Global Optimization Problems”
- **A. Valatavičius, S. Gudas** “A Deep Knowledge Based Evaluation of Applications Interoperability”
- **A. Žilinskas** “On Some Old Problems of Bayesian Global Optimization”

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Event Schedule
Friday, November 30

9 ⁰⁰ –10 ⁰⁰	Plenary Session <i>Kristof De Witte</i> “The Laboratory of an Education Economist. Testing Cures for Disadvantaged Students” (KU Leuven, Belgium) <i>Paulo Novais</i> “Human-Computer Interaction: A Behavioural Approach” (University of Minho, Portugal)
10 ⁰⁰ –11 ⁰⁰	Parallel Plenary Sessions <u>Section 1 (Education Data Modelling)</u> 1. <i>R. Želvys, R. Dukynaitė, A. Jakaitienė</i> “Trends of Secondary Analysis of International Student Achievement Studies” 2. <i>S. Raižienė, D. Stumbrienė, L. Ringienė, R. Dukynaitė, A. Jakaitienė</i> “The Effect of Student-Oriented Teaching Practices in Explaining PISA Science Performance Across EU Countries” <u>Section 2 (Modelling)</u> 1. <i>M. Lavrentiev, A. Marchuk, A. Romanenko, M. Shadrin</i> “About Application of Modern Hardware to the Tsunami Wave Parameters Evaluation” 2. <i>S. Bonni</i> “Multivariate Permutation Test for a Randomized Controlled Trial in the Presence of Small Sample Sizes” 3. <i>M. L. Despa, I. Ivan, E. N. Budacu, M. Visan</i> “Using Profiling to Assemble Freelance Software Development Teams in the Context of GDPR” <u>Section 3 (Advanced Technologies)</u> 1. <i>R. S. Sergeev, A. V. Tuzikov, A. Gabrielian, A. Rosenthal</i> “Application of Machine Learning to Analysis of M. Tuberculosis Whole Genomes and Investigation of Drug-Resistance Profile” 2. <i>A. Kamišalić, M. Turkanović, M. Heričko</i> “A Decentralized System for Managing Micro-Credentials Based on Blockchain 2.0” 3. <i>S. Gudas, A. Valatavičius</i> “Reviewing MDD from the Causal Modeling Perspective”
11 ⁰⁰ –11 ²⁰	Coffee

11 ²⁰ –12 ²⁰	Parallel Plenary Sessions
	<p><u>Section 4 (Education Data Modelling)</u></p> <ol style="list-style-type: none"> 1. <i>J. Vaitiekaitis, D. Stumbrienė, A. Jakaitienė</i> “Effectiveness and Efficiency of Education Systems: A Review of Research and a Way Forward” 2. Round table discussion (until 18⁰⁰) <p><u>Section 5 (Deep Learning)</u></p> <ol style="list-style-type: none"> 1. <i>S. Karakatič, M. Heričko, L. Pavlič</i> “Classification of Business Documents with Neural Network” 2. <i>V. Kazlauskas, A. Neverauskienė, L. Petkevičius</i> “Bone Age Assessment Using Deep Learning Detection Models” 3. <i>M. Morkūnas, P. Treigys, A. Laurinavičius</i> “Deep Learning-Based Method for Quantitative Collagen Framework Analysis in Routine Pathology Images” <p><u>Section 6 (Medicine Applications)</u></p> <ol style="list-style-type: none"> 1. <i>V. Liauchuk, V. Kovalev, E. Snezhko</i> “Scoring Severity of Pulmonary Tuberculosis Based on Automatic Lesion Detection in CT Scans” 2. <i>A. Kriščiukaitis, R. Urbanavičiūtė, R. Petrolis, D. Skiriutė</i> “Mathematical Morphology and Multivariate Analysis Based Protein Expression Signal Analysis in Microarray Imaging” 3. <i>A. V. Misiukas Misiūnas, T. Meškauskas, R. Samaitienė</i> “On the Implementation of Three-Stage Algorithm for EEG Classification by Diagnosis”
12 ³⁰ –14 ⁰⁰	Lunch
14 ⁰⁰ –16 ⁰⁰	Plenary Session “Business and Science Together” <p><i>Jonas Kubilius</i> “Deep Learning for Understanding Human Vision” (KU Leuven, Belgium; Massachusetts Institute of Technology, USA)</p> <p><i>Rytis Bieliauskas</i> “Cryptocurrency Technologies (Blockchain)” (CoinGate, JSC “Virtualios valiutos”)</p> <p><i>Šarūnas Šuipis</i> “Western Union: <i>Moving Money for Better</i> with Robotic Process Automation (RPA)” (Western Union Processing Lithuania)</p> <p><i>Ieva Jonaitytė</i> “Computer vision problems with CNN (Convolutional neural networks)” (Neurotechnology)</p>
16 ⁰⁰ –16 ²⁰	Closing session
16 ³⁰ –18 ⁰⁰	Coffee Poster Session (3) and Discussions
19 ⁰⁰ –21 ⁰⁰	Dinner

Poster Session (3), November 30

- *J. Arsenjeva, V. Medvedev, G. Dzemyda* “Data Fusion in Big Data Decision Making”
 - *K. Bagdonas, A. Venčkauskas* “Identification of Dynamic Parameters and Velocity Control of a Moving IoT Node Using a Single Ranging Measurement Source”
 - *R. Baronas, J. Kulys, L. Petkevičius, K. Petrauskas* “Computational Modeling of Bioreactors Based on Spherical Catalyst Particles”
 - *S. Bhandari, V. Jusas* “Examination and Classification of Data in Digital Forensics”
 - *L. Bikulčienė, T. Blažauskas, E. Butkevičiūtė, A. Muliolis* “System Architecture of the Fatigue and Workability Evaluation Platform”
 - *V. Fomin, D. Amilevičius* “Reducing Gender Bias in Data for Lithuanian”
 - *P. Juszczyk, I. Kaliszewski, J. Miroforidis, D. Podkopaev* “Exact Versus Evolutionary Methods to Derive Pareto Fronts in the Mean-variance Portfolio Investment Problem – The Evidence from the JKMP Data Set”
 - *D. Kalinauskaitė* “From Manual to Automated Measurement of Information Density”
 - *V. Kaminskas, E. Ščiglinskas* “Control of Emotion as Reaction to a Dynamic Virtual 3D Face: A Comparison of the Predictor-Based Control Schemes”
 - *R. Kasperienė, T. Krilavičius* “Application of Social Network and Content Analysis Methods for Assessing the Dynamics of Facebook Groups”
 - *A. Lopata, N. Makrickienė* “Requirements Engineering, Supported by Ontology and Enterprise Modelling”
 - *D. Mažeika, J. Mikejan* “Investigation of User Vulnerability in Social Networking Site”
 - *T. Raila, T. Meškauskas, G. Valinčius, T. Penkauskas, M. Jankunec* “Finite Elements Modeling of Electrochemical Impedance Spectra of Defected Phospholipid Membranes”
 - *L. Stasytis, A. Uselis, I. Gaubas, K. Bagdonas* “Edge-Based, Dynamic, Hierarchical Architecture for Super-Resolution Local Climate Prediction Using a Swarm of Field Programmable Gate Arrays as Accelerators”
 - *J. Toldinas, B. Lozinskis* “Cloudlet Based Prediction of Energy Consumption for Mobile Phones”
 - *J. Venskus, P. Treigys, J. Bernataviciene, A. Andziulis* “Aspects of Data Collection for Abnormal Marine Transport Evaluation”
 - *R. Užupytė, E. C. Wit* “Dynamical Network Modelling Based on Triadic Closure Effect”
 - *M. Visan, A. Ionita, F. G. Filip* “Data Analysis in Setting Action Plans of Telecom Operators”
 - *K. Ząbkiewicz* “Non-Standard Distance Measures in Data Streams Classification”
 - *L. Zariņa, J. Šķilters, G. Theara, K. Pētersone, N. Bērziņa* “Differences between STEM and Humanities & Social Sciences’ Students: Evidence from Complex Tests of Visual-Spatial and Verbal Skills”
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Event Schedule
Saturday, December 1

10⁰⁰–12⁰⁰

General Discussion and Concluding Remarks

Round table discussion