# 9th International Workshop on
# DATA ANALYSIS METHODS FOR SOFTWARE SYSTEMS

## Event Schedule
## Thursday, November 30

| | |
|---|---|
| $11^{00}$–$13^{00}$ | **Registration**<br>**Info Desk** |
| $13^{00}$–$13^{15}$ | **Opening. Welcome and Introductory Remarks**<br>*Gintautas Dzemyda* "Data Analysis Methods for Software Systems" (Vilnius University, Institute of Mathematics and Informatics) |
| $13^{15}$–$14^{15}$ | **Plenary Session**<br><br>*Kaisa Miettinen* "Data-driven Decision Support with Multiobjective Optimization" (Jyväskylä University, Finland)<br>*Yaroslav D. Sergeyev* "Lipschitz Global Optimization" (University of Calabria, Italy) |
| $14^{15}$–$15^{00}$ | **Coffee**<br>**Poster Session (1), Discussions** |
| $15^{00}$–$16^{00}$ | **Plenary Session**<br><br>*Bożena Kostek, G. Korvel* "Rough Sets Applied to Music Informatics" (Gdansk University of Technology, Poland)<br>*Konstantinos Fokianos* "Tests of Independence Based on Multivariate Distance Correlation Matrix" (University of Cyprus, Cyprus) |
| $16^{00}$–$17^{30}$ | **Coffee**<br>**Poster Session (2), Discussions** |
| $18^{00}$–$19^{30}$ | **Welcome Party** |

## Poster Session (1), November 30

- *K. Bagdonas, A. Venčkauskas* "IoT Mobile Network Node's Velocity Estimation via Curve Fitting"
- *A. Daranda, G. Dzemyda* "A Marine Traffic Prediction Using Recurrent Neural Networks"
- *L. Dovydaitis, V. Rudžionis* "Speaker Identification Using Deep Neural Networks"
- *R. Karbauskaitė, G. Tamulevičius* "Fractal Dimensions of Speech Signals"
- *R. Kasperienė* "Political Protest Groups and its Rhetoric's on Facebook"
- *D. Mažeika, R. Butleris* "Model-Based Systems Engineering Approach for Creating Secure Complex Systems"
- *A. Paulauskas, T. Valatkevičius, C. Canbulut* "Investigation of Interpolation Methods for Virtual Rowing Simulator"
- *K. Ryselis* "Efficient Human Motion Matching Algorithm for Depth Scanning Systems Based on Hausdorff Distance Metric"
- *D. Rudzika, A. Venčkauskas* "Securing Fog Network using Blockchain"
- *M. Sabaliauskas, G. Dzemyda* "On the Local Geometric Approach to Global Optimization for Multidimensional Scaling"
- *V. Šiaučiūnaitė, M. Landauskas, A. Vainoras, M. Ragulskis* "Evaluation and Analysis of the Power of Local Geomagnetic Field"
- *L. Stripinis, R. Paulavičius* "Improved DIRECT-type Algorithms for Generally Constrained Global Optimization Problems"
- *I. Timofejeva, A. Vainoras, M.Ragulskis* "Visualization of Relationships between ECG Parameters using Optimal Lagrangian Difference Matrices"
- *A. Valatavičius, S.Gudas* "Advanced Evaluation Methods of Multiple Application Software Interoperability"
- *J. Venskus, P. Treigys, J. Bernatavičienė, V. Medvedev* "Retraining Strategies of Modified SOM for Abnormal Marine Traffic Detection"

## Poster Session (2), November 30

- *L.Ališauskas, V. Marcinkevičius* "N Short Overview of Machine Learning Methods Used in Network Intrusion Detection Systems"
- *R. Baušys, R. Semėnas* "Heuristic Extension for Multi-Criteria Decision Making in Autonomous Ground Robot Navigation"
- *I. Bumbulienė, J. Mandravickaitė, T. Krilavičius* "Application of Machine Learning for MWE Identification"
- *A. Cholomskis, D. Mažeika* "Investigation of Self-managed Mircroservice Architecture"
- *J. Dainauskas, D. Vitkutė-Adžgauskienė* "LitWordNet Ontology Learning from Corpus Texts"
- *A. Jurgelevičius, L. Sakalauskas* "BOINC Based Enterprise Desktop GRID"
- *V. Kaminskas, E. Ščiglinskas* "Identification and Control of Human Response to 3D Face Stimuli Using Virtual Reality"
- *K. Lapin, T. Šturo* "Evaluation of Online Banking Acceptance"
- *J. Miliauskaitė, L. Paliulionienė* "Evolution of the Notions of Algorithm and Computation: a Systematic Mapping Study"
- *I. Mičiulytė, O. Vasilecas* "Research of Context Influence on Business Process Modelling and Simulation"
- *G. Ortega, F. Orts, E. M. Garzón, E. Filatovas, O. Kurasova* "CUDA and OpenMP Implementations for Solving SMACOF Problems"
- *N. Pozniak, L. Sakalauskas* "Optimisation of Surface Wastewater Treatment Filter Filler Effectiveness Using Mathematical Modelling"
- *A. Rapečka, J. L. Jedzinskas, G. Dzemyda* "Extended Analysis of the Sapnai.net Dataset"
- *S.G. Samuvel* "Classification of Motor Imagery Using PCA Features for Brain-Computer Interfaces"
- *V. Tiešis* "Construction of Active and Semi-Active Schedules for Job Shop with Fixed Post-Processing Periods"

# 9th International Workshop on
# DATA ANALYSIS METHODS FOR SOFTWARE SYSTEMS

## Event Schedule
## Friday, December 1

| | |
|---|---|
| $9^{00}$–$10^{00}$ | **Plenary Session**<br><br>*Michael Emmerich* "Bayesian Approaches to Multiobjective Optimization and its Integration into Industry 4.0 Frameworks" (Leiden University, Netherlands)<br>*Marjan Heričko* "Challenges in Metric-based Identification of Critical Software Components" (University of Maribor, Slovenia) |
| $10^{00}$–$11^{00}$ | **Parallel Plenary Sessions**<br><br>**Section 1**<br>1. **I. Kaliszewski** "Pareto Suboptimal Solutions to Large-Scale Multiobjective Multidimensional Knapsack Problems with Assessments of Pareto Suboptimality Gaps"<br>2. **Y. Kharin** "Analysis of Big Data Based on Conditionally Nonlinear Autoregressive Model"<br><br>**Section 2**<br>1. **S. Bonnini** "Combined Permutation Tests and Finite Sample Consistency"<br>2. **A. Serackis**, *V. Abromavičius, V. V. Borutinskaitė, D. Navakauskas* "Predictive Novelty Discovery for Real-Time Stereoscopic Image Analysis and Decision Support"<br>3. **R. Kriauzienė**, *A. Bugajev, R. Čiegis* "The New Parallel Multilevel Tool for Implementation of Applied Optimization Algorithms" |
| $11^{00}$–$11^{20}$ | **Coffee** |
| $11^{20}$–$12^{20}$ | **Parallel Plenary Sessions**<br>**Section 3**<br>1. *L. Zariņa, J. Šķilters,* **J. Borzovs** "Impact of Different Geometric and Functional Principles on Perception of Acceptability Areas: Differences in Computing and Humanities'Students" (University of Latvia, Latvia)<br>2. **V. Čyras**, *F. Lachmayer* "Formalisation of Taboo Concept as a Prohibition to Speak"<br>3. **D. Stumbrienė**, *A. S. Camanho, A.Jakaitienė* "Data Envelopment Analyses: from Education Systems Performance Assessment (Control) to Performance Management (Improvement)"<br>**Section 4**<br>1. **A. Krisciukaitis**, *R. Ramonaite, R. Petrolis, J. Skieceviciene, L. Kupcinskas* "Mathematical Morphology Based Method for Cultured Cell Motility Imaging"<br>2. **M. Morkūnas**, *P. Treigys, J. Bernatavičienė, A. Laurinavičius* "Impact of Color on Colorectal Cancer Tissue Classification in Hematoxylin and Eosin Stained Histological Images"<br>3. **R. Paulavičius**, *Claire S. Adjiman* "General-purpose Bilevel Solver BASBL: implementation and computational study using BASBLib library" |
| $12^{30}$–$14^{00}$ | **Lunch** |
| $14^{00}$–$15^{30}$ | **Plenary Session**<br>*Mario Cannataro* "High-Performance Management and Analysis of Omics Data: Experiences at University Magna Graecia of Catanzaro" (University "Magna Graecia" of Catanzaro, Italy)<br>*Radim Kolar* "Retinal Imaging and Image Processing for Glaucoma Diagnosis" (Brno University of Technology, Czech Republic)<br>*Massimiliano Zanin* "How can statistical physics help in data mining tasks?" (Universidad Politécnica de Madrid, Spain) |
| $15^{30}$–$17^{30}$ | **Coffee**<br>**Poster Session (3) and Discussions** |
| $19^{00}$–$21^{00}$ | **Dinner** |

## Poster Session (3), December 1

- *V. Abromavičius, A. Serackis,* **D. Navakauskas** "Automatic Adjustment of Disparity in Stereo View by Eye Activity based Markers"

- **R. Baronas,** *Ž. Ledas, R. Šimkus* "Computational Modeling of Active Suspensions of Growing Bacteria"

- **V. Bulavas,** *G.Dzemyda, V. Marcinkevičius* "An investigation of Early Cyber Threat Detection Using Ensembles of Machine Learning Methods"

- **D. Golubickas,** *A. Jankauskas, R. Slapikas, A. Basevičius, K. Morkunaite, V. Veikutis* "Image Quality and Radiation Dose of Low Dose Cardiac Cta in Obese Patients"

- **S. Gudas** "Knowledge Granularity in the Enterprise Information Systems"

- **P. Gudžius,** *O. Kurasova, E. Filatovas* "Satellite Imagery Application to Financial Markets via Machine Learning"

- **Š. Grigaliūnas,** *E. Toldinas* "Digital Evidence Object Model for Cybercrime Investigation"

- **G. Korvel,** *P. Treigys, G. Tamulevičius* "An Initial Investigation of Keyword Spotting using Convolutional Neural Network"

- **J. Mandravickaitė,** *T. Krilavičius* "Statistical Analysis of Word Frequency Distribution in Texts of Different Genres: Comparison of Lithuanian And English"

- **S. Minkevičius,** *E. Greičius* "On the Law of the Iterated Logarithm For Extremal Queue Length in an Open Queueing Network"

- **M. Ramanauskas,** *D. Šešok* "Genetic Algorithm Optimization of Foundations Using Boinc Framework"

- **R. Savukynas,** *V. Marcinkevičius, D. Dzemydienė* "A Research on Safety Methods of Communication Protocols of Internet of Things"

- **G. Stabingis,** *J. Bernatavičienė, G. Dzemyda, A. Paunksnis, R. Vaičaitienė, L. Stabingienė* "Automatic Artery Vein Ratio Measurements in Eye Fundus Images"

- **R. Užupytė,** *T. Krilavičius* "Analysis of Public Procurement Data Using Social Network Techniques"

- **M. Vaitonis,** *S. Masteika* "Research in High Frequency Statistical Arbitrage Strategies Applied to Microsecond and Nanosecond Information"

- *I. Veitaitė,* **A. Lopata** "Knowledge-Based UML Models Generation Transformation Algorithms from Enterprise Model"

- **K. Ząbkiewicz** "Using Lempel-Ziv Jaccard Distance Measure in Data Stream Classification"