

Contents

Robustness on Diverse Data Disturbance Levels of Tabu Search for a Single Machine Scheduling	1
Wojciech Bożejko, Paweł Rajba, and Mieczysław Wodecki	
Using Evolutionary Algorithm in On-line Deployment	11
Wiktor B. Daszczuk, Rafał Biedrzycki, and Piotr Wilkin	
Measures of Outlierness in High-Dimensional Data Under Correlation of Features – With Application for Open-Set Classification	22
Szymon Datko, Henryk Maciejewski, and Tomasz Walkowiak	
Performance of Modern Video Codecs in Real-Time Communication WebRTC Protocol	32
Aleksander Dawid and Paweł Buchwald	
Improved Software Reliability Through Failure Diagnosis Based on Clues from Test and Production Logs	42
Wojciech Dobrowolski, Maciej Nikodem, Marek Zawistowski, and Olgierd Unold	
Multiprocessor Tasks Scheduling. Fuzzy Logic Approach	50
Dariusz Dorota	
Anomaly Detection Techniques for Different DDoS Attack Types	63
Mateusz Gniewkowski, Henryk Maciejewski, and Tomasz Surmacz	
Nonparametric Tracking for Time-Varying Nonlinearities Using the Kernel Method	79
Purva Joshi and Grzegorz Mzyk	

Safety Assessment of the Two-Cascade Redundant Information and Control Systems Considering Faults of Versions and Supervision Means	88
Vyacheslav Kharchenko, Yuriy Ponochovnyi, Eugene Ruchkov, and Eugene Babeshko	
Network Anomaly Detection Based on Sparse Representation and Incoherent Dictionary Learning	99
Tomasz Kierul, Tomasz Andrysiak, and Michał Kierul	
UAV Fleet with Battery Recharging for NPP Monitoring: Queuing System and Routing Based Reliability Models	109
Ihor Kliushnikov, Vyacheslav Kharchenko, Herman Fesenko, Kostiantyn Leontiev, and Oleg Illiashenko	
Android Mobile Device as a 6DoF Motion Controller for Virtual Reality Applications	120
Maciej Kopczynski	
Performance Analysis and Comparison of Acceleration Methods in JavaScript Environments Based on Simplified Standard Hough Transform Algorithm	131
Damian Koper and Marek Woda	
Clustering Algorithms for Efficient Neighbourhood Identification in Session-Based Recommender Systems	143
Urszula Kuzelewska	
Reliability- and Availability-Aware Mapping of Service Function Chains in Softwarized 5G Networks	153
Jerzy Martyna	
Softcomputing Approach to Virus Diseases Classification Based on CXR Lung Imaging	163
Jacek Mazurkiewicz and Kamil Nawrot	
Single and Series of Multi-valued Decision Diagrams in Representation of Structure Function	176
Michał Mrena, Miroslav Kvassay, and Stanisław Czapp	
Neural Network Models for the Prediction of Time Series Representing Water Consumption: A Comparative Study	186
Krzysztof Pałczyński, Tomasz Andrysiak, Magda Czyżewska, Michał Kierul, and Tomasz Kierul	
Embedded Systems' Startup Code Optimization	197
Patryk Pankiewicz	
Labeling Quality Problem for Large-Scale Image Recognition	206
Agnieszka Pilch and Henryk Maciejewski	

Identification of Information Needs in the Process of Designing Safe Logistics Systems Using AGV	217
Honorata Poturaj	
Optimizing the Maintenance Strategy for Offshore Wind Turbines Blades Using Opportunistic Preventive Maintenance	227
Panagiotis M. Psomas, Agapios N. Platis, and Vasilis P. Koutras	
Estimation of Ethereum Mining Past Energy Consumption for Particular Addresses	237
Przemysław Rodwald	
Reducing Development Time of Embedded Processors by Using FSM-Single and ASMD-FSMD Techniques	245
Valery Salauyou	
Influence of Accelerometer Placement on Biometric Gait Identification	255
A. Sawicki	
Comparison of Orientation Invariant Inertial Gait Matching Algorithms on Different Substrate Types	265
A. Sawicki and K. Saeed	
Ant Colony Optimization Algorithm for Object Identification in Multi-cameras Video Tracking Systems	276
Krzysztof Schiff	
Towards Explainability of Tree-Based Ensemble Models. A Critical Overview	287
Dominik Sepiolo and Antoni Ligęza	
Identification of Information Needs for Risk Analysis Processes in Inland Navigation	297
Emilia T. Skupień and Agnieszka A. Tubis	
Using Fault Injection for the Training of Functions to Detect Soft Errors of DNNs in Automotive Vehicles	308
Peng Su and DeJiu Chen	
FPGA Implementations of BLAKE3 Compression Function with Intra-Round Pipelining	319
Jarosław Sugier	
An Impact of Data Augmentation Techniques on the Robustness of CNNs	331
Kamil Szyć	
A Fault Injection Tool for Identifying Faulty Operations of Control Functions in Automated Driving Systems	340
Kaveh Nazem Tahmasebi and DeJiu Chen	

Dual Learning Model for Multiclass Brain Tumor Classification	350
Rohit Thanki and Sanaa Kaddoura	
Feature Transformations for Outlier Detection in Classification of Text Documents	361
Tomasz Walkowiak	
Automatic Classification of Complaint Reports in Waste Management Systems Using TF-IDF, fastText, and BERT	371
Tomasz Walkowiak, Alicja Dąbrowska, Robert Giel, and Sylwia Werbińska-Wojciechowska	
Mobile Application for Diagnosing and Correcting Color Vision Deficiencies	379
Natalia Wcisło, Michał Szczepanik, and Ireneusz Józwiak	
Tool for Monitoring Time Reserves in a Warehouse	389
Klaudia Winiarska, Marina Chmil, and Karolina Radzajewska	
Author Index	399