

Contents

Detection of Network Attacks Using Hybrid ARIMA-GARCH Model	1
Tomasz Andrysiak, Łukasz Saganowski, Mirosław Maszewski, and Adam Marchewka	
Towards Mixed-Mode Risk Management – A Concept	13
Andrzej Bialas and Barbara Flisiuk	
Software Support of the Common Criteria Vulnerability Assessment	26
Andrzej Bialas	
On the Performance of Some C# Constructions	39
Ilona Bluemke, Piotr Gawkowski, Waldemar Grabski, and Konrad Grochowski	
Deep Stacking Convex Neuro-Fuzzy System and Its On-line Learning	49
Yevgeniy Bodyanskiy, Olena Vynokurova, Iryna Pliss, Dmytro Peleshko, and Yuriy Rashkevych	
Fault Tolerant ASIC/ULA-Based Computing Systems Testing via FPGA Prototyping with Fault Injection	60
Oleg Brekhov and Alexander Klimenko	
Critical Energy Infrastructure Safety Assurance Strategies Considering Emergent Interaction Risk	67
Eugene Brezhnev, Vyacheslav Kharchenko, Viacheslav Manulik, and Konstantin Leontiev	
Modelling an Optimal Capital Structure of the Telecommunication Company	79
Alexandr Y. Bystryakov, Tatiana K. Blokhina, Elena V. Savenkova, Oksana A. Karpenko, and Elena V. Ponomarenko	

Specification of Constraints in a System-of-Systems Configuration	89
Dariusz Caban and Tomasz Walkowiak	
A Methodological Framework for Model-Based Self-management of Services and Components in Dependable Cyber-Physical Systems	97
DeJiu Chen and Zhonghai Lu	
Maintenance of Wind Turbine Scheduling Based on Output Power Data and Wind Forecast.	106
Guglielmo D’Amico, Filippo Petroni, and Robert Adam Sobolewski	
Deadlock Detection in Distributed Systems Using the IMDS Formalism and Petri Nets.	118
Wiktor B. Daszczuk and Wlodek M. Zuberek	
Scheduling Tasks in Embedded Systems Based on NoC Architecture Using Simulated Annealing	131
Dariusz Dorota	
Adaptation of Ant Colony Algorithm for CAD of Complex Systems with Higher Degree of Dependability.	141
Mieczyslaw Drabowski	
Context-Aware Anomaly Detection in Embedded Systems	151
Fatemeh Ehsani-Besheli and Hamid R. Zarandi	
Comparative Analysis of Calculations in Cryptographic Protocols Using a Combination of Different Bases of Finite Fields	166
Sergey Gashkov and Alexander Frolov	
Dynamic Redundancy in Communication Network of Air Traffic Management System.	178
Igor Kabashkin	
Availability Models and Maintenance Strategies for Smart Building Automation Systems Considering Attacks on Component Vulnerabilities	186
Vyacheslav Kharchenko, Yuriy Ponochovnyi, Al-Sudani Mustafa Qahtan Abdulmunem, and Anton Andrashov	
Concept of Multi-criteria Evaluation of the Airport Security Control Process	196
Artur Kierzkowski and Tomasz Kisiel	
Extending Continuous Integration with Post-mortem Debug Automation of Unhandled Exceptions Occurred in Kernel or User Mode Applications	205
Henryk Krawczyk and Dawid Zima	

The Methodology of Studying of Active Traffic Management Module Self-oscillation Regime 215
 Dmitry S. Kulyabov, Anna V. Korolkova, Tatyana R. Velieva, Ekaterina G. Eferina, and Leonid A. Sevastianov

Effectiveness Examination of a Multi-channel CSMA/CA Detector. 225
 Dariusz Laskowski, Marcin Pólkowski, Piotr Łubkowski, and Leszek Nowosielski

IaaS vs. Traditional Hosting for Web Applications - Cost Effectiveness Analysis for a Local Market 233
 Paweł Lorenc and Marek Woda

High Quality Stabilization of an Inverted Pendulum Using the Controller Based on Trigonometric Function 244
 Michał Lower

The Application of RFID Technology in Supporting the Process of Reliable Identification of Objects in Video Surveillance Systems. 254
 Piotr Lubkowski, Dariusz Laskowski, and Marcin Polkowski

Aspect-Oriented Management of Service Requests for Assurance of High Performance and Dependability 264
 Paweł Lubomski, Paweł Pszczoliński, and Henryk Krawczyk

Process of Mobile Application Development from the Security Perspective. 277
 Aneta Majchrzycka and Aneta Poniszewska-Maranda

Managing and Enhancing Performance Benchmarks. 287
 Jakub Maleszewski and Janusz Sosnowski

Reliability Optimization for Controller Placement in Software-Defined Networks 298
 Jerzy Martyna

Agent Approach to Network Systems Experimental Analysis in Case of Critical Situations. 308
 Jacek Mazurkiewicz

Reliability Assessment of Driving Systems of City Buses 320
 Marek Młyńczak, Murat Muzdybayev, Alfiya Muzdybayeva, and Dinara Myrzabekova

Testing the Significance of Parameters of Models Estimating Execution Time of Parallel Program Loops According to the Open MPI Standard 331
 Łukasz Nozdrzykowski and Magdalena Nozdrzykowska

On Application of Regime-Switching Models for Short-Term Traffic Flow Forecasting	340
Dmitry Pavlyuk	
Critical Information Infrastructure Protection Model and Methodology, Based on National and NATO Study	350
Lachezar Petrov, Nikolai Stoianov, and Todor Tagarev	
The Method of Creating Players in the Marketing Strategy	358
Henryk Piech, Aleksandra Ptak, and Michal Saczek	
Principles of Mobile Walking Robot Control in Scope of Technical Monitoring Tasks	368
Oleksandr Radomskyi	
Computer Systems – Simple, Complicated or Complex	383
Dominik Strzałka	
Improving FPGA Implementations of BLAKE and BLAKE2 Algorithms with Memory Resources	394
Jarosław Sugier	
Assurance Case Patterns On-line Catalogue	407
Monika Szczygielska and Aleksander Jarzębowicz	
Information System as a Cause of Cargo Handling Process Disruption in Intermodal Terminal	418
Justyna Świeboda and Mateusz Zajęc	
Anticipation Scheduling in Grid Virtual Organizations	428
Victor Toporkov, Dmitry Yemelyanov, Vadim Loginov, and Petr Potekhin	
Stability Enhancement Against Fluctuations in Complex Networks by Optimal Bandwidth Allocation	439
K.Y. Henry Tsang and K.Y. Michael Wong	
The Scope of the Collected Data for a Holistic Risk Assessment Performance in the Road Freight Transport Companies	450
Agnieszka Tubis and Sylwia Werbińska-Wojciechowska	
Language Processing Modelling Notation – Orchestration of NLP Microservices	464
Tomasz Walkowiak	
Type Variety Principle and the Algorithm of Strategic Planning of Diversified Portfolio of Electricity Generation Sources	474
Volodymyr Zaslavskyi and Maya Pasichna	
Author Index	487



<http://www.springer.com/978-3-319-59414-9>

Advances in Dependability Engineering of Complex
Systems

Proceedings of the Twelfth International Conference on
Dependability and Complex Systems DepCoS-RELCOMEX,
July 2 - 6, 2017, Brunów, Poland

Zamojski, W.; Mazurkiewicz, J.; Sugier, J.; Walkowiak, T.;
Kacprzyk, J. (Eds.)

2018, XVI, 488 p. 201 illus., Softcover

ISBN: 978-3-319-59414-9