Table of Contents

An Empirical Study of Mutation-Based Test Case Clustering Prioritization and Reduction Technique Longbo Li, Yanhui Zhou, Yong Yu, Feiyan Zhao, Shenghua Wu, and Zhe Yang	1
A Framework for Robust, Low-Overhead Binary Instrumentation Amir Majlesi-Kupaei, Danny Kim, Kapil Anand, Aparna Kotha, Khaled Elwazeer, and Rajeev Barua	7
Automatically Checking Conformance on Asynchronous Reactive Systems Camila Sonoda Gomes and Adilson Luiz Bonifacio	17
An Empirical Evaluation of the Accuracy of NESMA Function Points Estimates Luigi Lavazza and Geng Liu	24
Metaphor Models in Software Education: An Empirical Study Evgeny Pyshkin	30
A Practical Approach to Teaching Requirements Engineering in Computing Programs Anderson Guerra and Julio Furtado	36
Economic Impact of Cloud Computing in the Health System: A Systematic Mapping Jonathan Santos and Felipe Ferraz	44
SIMON: Semantic Inference Model for Security in Cyber Physical Systems Using Ontologies Rohith Yanambaka Venkata, Rohan Maheshwari, and Krishna Kavi	49
OpenCL-Generated Optimizing Compiler for FPGA Using ROSE Compiler Infrastructure Yuichiro Aoki	57
From a Subset of LTL Formula to Buchi Automata Bilal Kanso and Ali Kansou	61
Towards Component-Based Development of Textual Domain-Specific Languages Andreas Wortmann	68
An Intermediate Model for the Code Generation from the Two-Hemisphere Model Konstantins Gusarovs and Oksana Nikiforova	74
Augmenting Fiat Currency with an Integrated Managed Cryptocurrency Peter Mell	83
Blockchain Use Cases: A Systematic Study	91

Thiago Lopes Silva, Felipe Silva Ferraz, and Francisco Icaro Ribeiro	
Denoising Autoencoder with Dropout based Network Anomaly Detection Safa Mohamed, Ridha Ejbali, and Mourad Zaied	98
i* (iStar) Security Hierarchy for Cloud Computing Fiza Saher Faizan, Seemab Latif, and Athar Mohsin Zaidi	104
Implementing a Protocol Native Managed Cryptocurrency Peter Mell, Aurelien Delaitre, Frederic de Vaulx, and Philippe Dessauw	110
A Joint Encryption-Compression Technique for Images Based on Beta Chaotic Maps and SPIHT Coding Najet Elkhalil, Rim Zahmoul, Ridha Ejbali, and Mourad Zaied	118
Requirements Traceability in Cyber Physical Systems Using Semantic Inference Rohith Yanambaka Venkata, Rohan Maheshwari, and Krishna Kavi	123
The Matching Lego(R)-Like Bricks Problem: Including a Use Case Study in the Manufacturing Industry Martin Zinner, Kim Feldhoff, Rui Song, Andre Gellrich, and Wolfgang E. Nagel	130
Business Intelligence Based Tool Development Libni Neves, Eric Ferraz, and Alipio Carvalho	141
Training Project Managers to Acquire GSD Soft Skills: A Serious Game Ruben Marquez, Aurora Vizcaino, and Felix Oscar Garcia	143
Antecedents to Achieve Kanban Optimum Benefits in Software Companies Muhammad Ovais Ahmad, Anna Rohunen, and Paivi Raulamo-Jurvanen	147
A Critical Review of the Use of Spikes in Agile Software Development Hussein Al Hashimi and Andrew Gravell	154
Graph-Based Analysis of the Architectural Restructuring Impact on Energy Efficiency Basma Khil, Adel Khalfallah, and Samir Ben Ahmed	163
On the Realization of Meta-Circular Code Generation: The Case of the Normalized Systems Expanders Herwig Mannaert, Koen De Cock, and Peter Uhnak	171
An Enhanced Fault Prediction Model for Embedded Software based on Code Churn, Complexity Metrics, and Static Analysis Results Safa Omri, Carsten Sinz, and Pascal Montag	177
Incorporating Petri Nets into DEVS Formalism for Precise System Modeling	184

Radek Koci and Vladimir Janousek	
Comparative Evaluation of Input Features Used for Deep Neural Networks to Recognize Semantic Indoor Scene from Time-Series Images Obtained Using Mobile Robot Hirokazu Madokoro, Hanwool Woo, and Kazuhito Sato	190
Re-Planning of Bus Timetable Based on Route Search Log to Get on Now Toshihiko Sasama, Bhattacherjee Rupali, Takao Kawamura, and Kazunori Sugahara	196
Statistical Processing of Delay Time of Public Secondary Traffic and its Application to the Operation Plan Rupali Bhattacherjee, Toshihiko Sasama, Takao Kawamura, and Kazunori Sugahara	198
Computer Analysis of World Chess Championship Players Oscar Romero, Lorena Parra, Jose Fernando Cuenca, and Jaime Lloret	200
A Proposal of Descriptive Pattern for Maintainability Requirements Yuki Sanomachi and Tsuyoshi Nakajima	206
A SysML-based Approach to Requirements Traceability Using BPMN and DMN Corina Abdelahad, Daniel Riesco, and Carlos Kavka	210
Alignment of Test Driven Development and Relative Correctness-based Development Marwa Benabdelali and Lamia Labed Jilani	217
Modeling and Verification of Car Parking System Hadiqa Alamdar Bukhari and Sidra Sultana	223