Table of Contents

A Teaching Method for Software Measurement Process based on Gamification 1
Lennon Sales Furtado and Sandro Ronaldo Bezerra Oliveira

A Harmonization with CMMI-SVC Practices for the Implementation of the ITIL Service Design Coordination Process 9
George Hamilton Barbosa Fernandes Ota and Sandro Ronaldo Bezerra Oliveira

Automatic Documentation of the Development of Numerical Models for Scientific Applications using Specific Revision Control 18
Martin Zinner, Karsten Rink, Rene Jakel, Kim Feldhoff, Richard Grunzke, Thomas Fischer, Rui Song, Marc Walther, Thomas Jejkal, Olaf Kolditz, and Wolfgang E. Nagel

The Blockchain-based Internet of Things Development: Initiatives and Challenges 28
Sergio Mendonca, Joao Silva Junior, and Fernanda Alencar

Authentication and the Internet of Things: A Survey Based on a Systematic Mapping. 34
Emidio Silva, Wallace Lima, Felipe Ferraz, and Francisco Ribeiro

CLIPS:Customized Levels of IoT Privacy and Security 41
Rohith Yanambaka Venkata and Krishna Kavi

Sustainability and Diversity of Open Source Software Communities: Analysis of the Android Open Source Project 48
Remo Eckert and Andreas Mueller

Extracting Executable Architecture From Legacy Code Using Static Reverse Engineering 55
Rehman Arshad and Kung Kiu Lau

Analyse Agile Software Development Teamwork Productivity using Qualitative System Dynamics Approach 60
Israt Fatema and Kazi Muheymin Sakib

Accuracy Evaluation of Model-based COSMIC Functional Size Estimation 67
Luigi Lavazza

Measuring Differences to Compare sets of Models and Improve Diversity in MDE 73
Adel Ferdjoukh, Florian Galinier, Eric Bourreau, Annie Chateau, and Clementine Nebut

Proposal of a Computer Supported Collaborative Work Model for E-Commerce Web Sites Based on a Quality Guiding Framework 82
Hedia Jegham and Sonia Ghannouchi

Developing Architecture in Volatile Environments - Lessons Learned from a Biobank IT Infrastructure Project 95

Jarkko Hyysalo, Gavin Harper, Jaakko Sauvola, Anja Keskinarkaus, Ilkka Juuso, Miikka Salminen, and Juha Partala

Unifying Definitions for Modularization, Abstraction, and Encapsulation as a Step Toward Foundational Multi-Paradigm Software Engineering Principles 105
Stephen Clyde and Jorge Edison Lascano

iMobile: A Framework to Implement Software Agents for the iOS Platform 114
Pedro Miranda, Andrew Diniz, and Carlos Lucena

Software Architecture Modeling for Legacy Health Information Systems Using Polyglot Persistence and Archetypes 122
Andre Araujo, Valeria Times, Marcus Silva, and Carlos Bezerra

Evaluating Enterprise Resource Planning Analysis Patterns using Normalized Systems Theory 128
Ornchanok Chongsombut and Jan Verelst

A Survey and Analysis of Reference Architectures for the Internet-of-things 132
Hongyu Pei Breivold

Improving Run-Time Memory Utilization of Component-based Embedded Systems with Non-Critical Functionality 139
Gabriel Campeanu and Saad Mubeen

From Language-Independent Requirements to Code Based on a Semantic Analysis 145
Mariem Mefteh, Nadia Bouassida, and Hanene Ben-Abdallah

GMAP: A Generic Methodology for Agile Product Line Engineering 157
Farima Farmahini Farahani and Raman Ramsin

A Benchmarking Criteria for the Evaluation of OLAP Tools 167
Fiaz Majeed

A Precondition Calculus for Correct-by-Construction Graph Transformations 172
Amani Makhlouf, Christian Percebois, and Hanh Nhi Tran

FANTASIA: A Tool for Automatically Identifying Inconsistency in AngularJS MVC Applications 178
Md Rakib Hossain Misu and Kazi Sakib

Scope Management on Software Projects - An Updated Approach to Maturity Levels and Services in the Gaia Scope Framework 185
Darlan Dalsasso and Rodolfo Miranda de Barros

IoT Caching in Information Centric Networks: A Systematic Mapping 192
Higgor L. S. Valenc?a, Felipe S. Ferraz, and Francisco I. N. Ribeiro

Survey on Microservice Architecture - Security, Privacy and Standardization on Cloud Computing Environment 199
Luciano Aguiar, Washington Almeida, Raphael Hazin, Anderson Lima, and Felipe Ferraz

Function-as-a-Service X Platform-as-a-Service: Towards a Comparative Study on FaaS and PaaS 206
Lucas Francisco Albuquerque Jr, Felipe Silva Ferraz, Sergio Mario Lins Galdino, and Rodrigo F. A. P. Oliveira

Architectural Programming with MontiArcAutomaton 213
Arvid Butting, Oliver Kautz, Bernhard Rumpe, and Andreas Wortmann

Which API Lifecycle Model is the Best for API Removal Management? 219
Dung-Feng Yu, Cheng-Ying Chang, Hewijin Christine Jiau, and Kuo-Feng Ssu

Evaluating an Application Ontology for Recommending Technically Qualified Distributed Development Teams 225
Larissa Barbosa and Gledson Elias

Validation of Specification Models Based on Petri Nets 232
Radek Koci and Vladimir Janousek

An OO and Functional Framework for Versatile Semantics of Logic-Labelled Finite State Machines 238
Callum McColl, Vladimir Estivill-Castro, and Rene Hexel

A Reusable Adaptation Component Design for Learning-Based Self-Adaptive Systems 244
Kishan Kumar Ganguly and Kazi Sakib

Immersive Coding: A Virtual and Mixed Reality Environment for Programmers 250
Roy Oberhauser