# Table of Contents

Foreward...............................................................................................................iii
Conference Organization.......................................................................................iv
KeyNote 1: Model Checking Hybrid Systems, Professor Edmund M. Clarke ..........ix
KeyNote 2: Development of Active Safety Assurance Technologies for Rail Intelligent Transportation System in China, Professor Yong Qin...............x
KeyNote 3: Open Product Innovation, Professor Guenther Ruhe ...........xi
Panel Discussion: SEKE vs. Big Data, Professor Shi-kuo Chang, Professor Alexandros Labrinidis, Professor Zewyu Gao, Professor Gregory Kapfhammer...........xii

## Requirements Engineering I

Towards Building Knowledge on Causes of Critical Requirements Engineering Problems . 1
Marcos Kalinowski, Rodrigo Spinola, Tayana Conte, Rafael Prikladnicki, Daniel Méndez Fernández and Stefan Wagner

Identification and Classification of Requirements from App User Reviews (S) ............ 7
Hui Yang and Peng Liang

MoLVERIC: An Inspection Technique for MoLIC Diagrams (S) ............................ 13
Adriana Lopes, Anna Beatriz Marques, Simone Barbosa and Tayana Conte

## Self-Adaptive Software

A Middleware Framework for Leveraging Local and Global Adaptation in IT Ecosystems . 18
Soojin Park and Young B. Park

A Framework Based on Learning Techniques for Decision-making in Self-adaptive Software (S) .............................................................................................................. 24
Frank José Affonso, Gustavo Leite, Rafael A. P. Oliveira and Elisa Yumi Nakagawa

Towards Knowledge-intensive Software Engineering Framework for Self-Adaptive Software (S) .............................................................................................................. 30
Hyo-Cheol Lee and Seok-Won Lee

## Software Project Management I

How to Teach the Usage of Project Management Tools in Computer Courses: A Systematic Literature Review (S) .......................................................... 36
Rafael Gonçalves and Christiane Gresse von Wangenheim

Soft Skills in Scrum Teams. A survey of the most valued to have by Product Owners and Scrum Masters (S) ............................................................ 42
Gerardo Matturro, Carina Fontán and Florencia Raschetti

Reflecting, adapting and learning in small software organizations: an action research approach (S) ............................................................ 46
Suzana Sampaio, Marcelo Marinho, Alexandre Luna and Hermano Moura

## Slow Intelligence System
Application of Slow Intelligence Framework for Smart Pet Care System Design ........... 51
   Shi-Kuo Chang, Wen-Hui Chen, Wen-Chyi Lin and Christopher Lee Thomas

A Slow Intelligence System Test Bed Enhanced with Super-Components .................. 57
   Shi-Kuo Chang, Sen-Hua Chang, Jun-Hui Chen, Xiao-Yu Ge, Nikolaos Katsipoulakis,
   Daniel Petrov and Anatoli Shein

An Adaptive Contextual Recommender System: a Slow Intelligence Perspective .......... 64
   Francesco Colace, Luca Greco, Saverio Lemma, Marco Lombardi, Duncan Yung and
   Shi-Kuo Chang

Testing I

   Lan Lin, Jia He and Yufeng Xue

Test Model and Coverage Analysis for Location-based Mobile Services ................. 80
   Tao Zhang, Jerry Gao, Oum-El-Kheir Aktouf and Tadahiro Uehara

Generating various contexts from permissions for testing Android applications (S) .... 87
   Kwangsk Song, Ah-Rim Han, Sehun Jeong and Sungdeok Cha

Recommendation Systems

Context-aware Recommendation System with Anonymous User Profile Learning .......... 93
   Yan Liu, Yangyang Xu and Mei Chen

Recommendation in the Digital TV Domain: an Architecture based on Textual
   Description Analysis ................................................................. 99
   Felipe Barbosa Araújo Ramos, Antonio Alexandre Moura Costa, Reudismam Rolim,
   Gustavo Soares, Hyggo Oliveira de Almeida and Angelo Perkusich

A Collaborative Method to Reduce the Running Time and Accelerate the k-Nearest
   Neighbors Search (S) ............................................................. 105
   Antonio Alexandre Moura Costa, Reudismam Rolim de Sousa, Felipe Barbosa Araújo
   Ramos, Gustavo Araújo Soares, Hyggo Oliveira de Almeida and Angelo Perkusich

Cloud Computing: Security and Deployment

Achieving Efficient Access Control via XACML Policy in Cloud Computing .......... 110
   Xin Pei, Huiqun Yu and Guisheng Fan

A Reliable and Secure Cloud Storage Schema Using Multiple Service Providers .......... 116
   Haiping Xu and Deepti Bhalerao

Towards a Deployment System for Cloud Applications ................................... 122
   Ruici Luo, Wei Ye and Shikun Zhang

Empirical Software Engineering I

Impact of Unanticipated software evolution on development cost and quality: an
   empirical evaluation ................................................................. 128
   Rodrigo A. Vilar, Anderson Lima, Hyggo Almeida and Angelo Perkusich
An empirical study on the impact of Python dynamic features on change-proneness …… 134
  Beibei Wang, Lin Chen, Wanwanying Ma, Zhifei Chen and Baowen Xu
Evaluating Software Engineers’ Acceptance of a Technique and Tool for Web Usability
Inspection……………………………………………………………………………………………………………… 140
  Luis Jorge Enrique Rivero Cabrejos, Auri Marcelo Rizzo Vincenzi, José Carlos
  Maldonado and Tayana Conte

Knowledge Management

AMBIT: Semantic Engine Foundations for Knowledge Management in
Context-dependent Applications……………………………………………… 146
  Riccardo Martoglia
Documenting Implementation Decisions with Code Annotations……………… 152
  Tom-Michael Hesse, Arthur Kuehlwein, Barbara Paech, Tobias Roehm and Bernd
  Bruegge
An Evaluation Study of Architectural Design Decision Paradigms in Global Software
Development……………………………………………………………………………………………………………… 158
  Meiru Che and Dewayne Perry
An approach for classifying design artifacts (S)……………………………… 164
  Sebastien Adam, Ghizlane El Boussaidi and Alain Abran

Data Mining for Knowledge Engineering

A Novel Hybrid Approach for Diarrhea Prediction…………………………… 168
  Yongming Wang and Junzhong Gu
Are We Living in a Happy Country: An Analysis of National Happiness from Machine
Learning Perspective (S)…………………………………………………………… 174
  Theresia Ratih Dewi Saputri and Seok-Won Lee
BiBinConvmean : A Novel Biclustering Algorithm for Binary Microarray Data (S) …… 178
  Haifa Ben Saber and Mourad Elloumi

Intelligent Transportation Systems

Integration testing criteria for mobile robotic systems……………………… 182
  Maria Brito, Marcos Santos, Paulo Souza and Simone Souza
Embedded Real Time Blink Detection System for Driver Fatigue Monitoring…… 188
  Soheil Salehian and Behrouz Far
A Smartphone-based System for Automated Congestion Prediction (S)………… 195
  Lance Fiondella, Swapna Gokhale and Nick Lownes

Database and Information Systems

Endowing NoSQL DBMS with SQL Features Through Standard Call Level Interfaces….. 201
  Oscar Pereira, David Simões and Rui Aguiar
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimizing of an Object-Oriented File System (OOFS)</td>
<td>208</td>
</tr>
<tr>
<td>Ling-Hua Chang and Sanjiv Behl</td>
<td></td>
</tr>
<tr>
<td>An Evolution Mechanism for Dynamic Physical Applications in the Internet of Things</td>
<td>213</td>
</tr>
<tr>
<td>Kaibin Xie, Haiming Chen, Dong Li and Li Cui</td>
<td></td>
</tr>
<tr>
<td>Software Product and Process Line</td>
<td></td>
</tr>
<tr>
<td>Architectural Evolution of a Software Product Line: an experience report</td>
<td>217</td>
</tr>
<tr>
<td>Marcelo Laser, Elder Macedo Rodrigues, Anderson Domingues, Flavio Oliveira and Avelino F. Zorzo</td>
<td></td>
</tr>
<tr>
<td>Quality Evaluation of Artifacts in Tailored Software Process Lines (S)</td>
<td>223</td>
</tr>
<tr>
<td>Camila Brondani, Gelson Bertuol and Lisandra Fontoura</td>
<td></td>
</tr>
<tr>
<td>Marcelo Terenciani, Debora Paiva, Geraldo Landre and Maria Istela Cagnin</td>
<td></td>
</tr>
<tr>
<td>An Architecture Description Language for Dynamic Service-Oriented Product Lines (S)</td>
<td>231</td>
</tr>
<tr>
<td>Seza Adjoyan and Abdelhak Seriai</td>
<td></td>
</tr>
<tr>
<td>Social Networks</td>
<td></td>
</tr>
<tr>
<td>Social Analysis of the SEKE Co-Author Network</td>
<td>237</td>
</tr>
<tr>
<td>Swapna Gokhale and Rehab El-Kharboutly</td>
<td></td>
</tr>
<tr>
<td>A Rule-based Method for Discovering Trajectory Profiles</td>
<td>244</td>
</tr>
<tr>
<td>Lucas Andre Alencar, Luis Otavio Alvares, Chiara Renso, Alessandra Raffaeta and Vania Bogorny</td>
<td></td>
</tr>
<tr>
<td>A Balanced Method for Budgeted Influence Maximization</td>
<td>250</td>
</tr>
<tr>
<td>Xinhui Xu, Yong Zhang, Qingcheng Hu and Chunxiao Xing</td>
<td></td>
</tr>
<tr>
<td>Using implications from FCA to represent a two mode network data (S)</td>
<td>256</td>
</tr>
<tr>
<td>Sebastiao M. Neto, Mark A. J. Song, Luiz E. Zarate and Sergio M. Dias</td>
<td></td>
</tr>
<tr>
<td>Programming Languages and Software Prototyping</td>
<td></td>
</tr>
<tr>
<td>How do developers use C++ libraries? An empirical study</td>
<td>260</td>
</tr>
<tr>
<td>Di Wu, Lin Chen, Yuming Zhou and Baowen Xu</td>
<td></td>
</tr>
<tr>
<td>A Case Study Approach: Iterative Prototyping Model Based Detection of Macular Edema in Retinal OCT Images (S)</td>
<td>266</td>
</tr>
<tr>
<td>Sadaf Sahar, Sadaf Agaz and M.Usman Akram</td>
<td></td>
</tr>
<tr>
<td>A metrics-based comparative study on object-oriented programming languages</td>
<td>272</td>
</tr>
<tr>
<td>Di Wu, Lin Chen, Yuming Zhou and Baowen Xu</td>
<td></td>
</tr>
<tr>
<td>TAGGINGSENSE: Method Based On Sensemaking For Object-Oriented Source Code Comprehension (S)</td>
<td>278</td>
</tr>
<tr>
<td>Daniel Schreiber, Andre Menolli, Sheila Reinehr and Andreia Malucelli</td>
<td></td>
</tr>
<tr>
<td>Software and Knowledge Visualization</td>
<td></td>
</tr>
<tr>
<td>xvi</td>
<td></td>
</tr>
</tbody>
</table>
Facilitating Peer Learning and Knowledge Sharing in STEM Courses via Pattern Based Graph Visualization. ................................................................. 284
Emilio Zegarra, Shi-Kuo Chang and Jingtao Wang

Scaffolding MATLAB and Octave Software Comprehension Through Visualization (S) ................................................................. 290
Ivan Lessa, Glauco Carneiro, Miguel Monteiro and Fernando Abreu

To Enlighten Hidden Facts in The Code: A Review of Software Visualization Metaphors (S) ................................................................. 294
Yangyang Xu, Yan Liu and Jiabin Zheng

**Software Quality and Reliability**

Reliability-Based Software Rejuvenation Scheduling for Cloud-Based Systems ............ 298
Jean Rahme and Haiping Xu

Reporting an Experience on the Establishment of a Quality Model for Systems-of-Systems (S) ................................................................. 304
Daniel Soares Santos, Brauner R. N. Oliveira, Adolfo Duran and Elisa Yumi Nakagawa

Experimental Frame Design Using E-DEVSM for Software Quality Evaluation (S) ........ 310
Bei Cao, Huang Linpeng and Jianpeng Hu

**Software Project Management II**

Analysis of Risk Dependencies in Collaborative Risk Management (S) ...................... 314
Catherine Barchet, Luís Alvaro Silva and Lisandra Fontoura

A Practical Approach to Software Continuous Delivery Focused on Application Lifecycle Management (S) ................................................................. 320
Everton Gomede, Rafael Thiago Da Silva and Rodolfo Miranda de Barros

Towards Effective Developer Recommendation in Software Crowdsourcing (S) ............ 326
Shixiong Zhao, Beijun Shen, Yuting Chen and Hao Zhong

**Requirements Engineering II**

Creating User Scenarios through User Interaction Diagrams by Non-Technical Customers: 330
Douglas Hiura Longo and Patrícia Vilain

How Stakeholders’ Commitment May Affect the Success of Requirements Elicitation ..... 336
Corentin Burnay, Ivan Jureta and Stéphane Faulkner

An Exploration of System Architecture on Integrating Building Management System in High-Rise Building (S) ................................................................. 342
Zunhe Liu and Yan Liu

**Testing II**

Analyzing Exceptions in the Context of Test Data Generation Based on Symbolic Execution ................................................................. 346
Marcelo Medeiros Eler, Vinicius Durelli and André Takeshi Endo
Automatically Evaluating the Efficiency of Search-Based Test Data Generation for Relational Database Schemas ........................................... 352
  *Cody Kinneer, Gregory Kapfhammer, Phil McMinn and Chris Wright*

Similarity-based regression test case prioritization (S) ......................... 358
  *Rongcun Wang, Shujuan Jiang and Deng Chen*

Software Safety and Security I

Secure, Dynamic and Distributed Access Control Stack for Database Applications ........ 364
  *Oscar Pereira, Diogo Regateiro and Rui Aguiar*

Specifying and Dynamically Monitoring the Exception Handling Policy .................... 370
  *Joilson Abrantes and Roberta Coelho*

DefDroid: Securing Android with Fine-Grained Security Policy (S) ....................... 375
  *Chao Huang, Shuohong Wang, Haiyang Sun and Zhengwei Qi*

Data Mining for Software Engineering

Developers’ importance from the leader perspective ........................................ 379
  *Guilherme Tangari and Marcelo Maia*

Stability of Three Forms of Feature Selection Methods on Software Engineering Data ...... 385
  *Huanjing Wang, Taghi Khoshgoftaar and Amri Napolitano*

Building a Large-scale Software Programming Taxonomy from Stackoverflow .......... 391
  *Jiangang Zhu, Beijun Shen, Xuyang Cai and Haofen Wang*

Empirical Software Engineering II

An empirical study on predicting defect numbers ......................................... 397
  *Mingming Chen and Yutao Ma*

Causes of Architecture Changes: An Empirical Study through the Communication in OSS Mailing Lists .............................................................. 403
  *Wei Ding, Peng Liang, Antony Tang and Hans Van Vliet*

A Behavior Marker tool for measurement of the Non-Technical Skills of Software Professionals: An Empirical Investigation ....................................... 409
  *Lisa Lacher, Gursimran Walia, Fabian Fagerholm, Max Pagels, Kendall Nygard and Jürgen Münch*

A Platform for Empirical Research on Information System Evolution ..................... 415
  *Robert Heinrich, Stefan Görtner, Tom-Michael Hesse, Thomas Ruhroth, Ralf Reussner, Kurt Schneider, Barbara Paech and Jan Jürjens*

Software Assurance

A JVM-based Testing Harness for Improving Component Testability ....................... 421
  *Weifeng Xu and Omar Ariss*

Detecting Reporting Anomalies in Streaming Sensing Systems .......................... 427
  *Shirlee Hughes, Yuheng Du and Jason Hallstrom*
Fault-Based Testing of Combining Algorithms in XACML3.0 Policies ........................................ 433
  Dianxiang Xu, Ning Shen and Yunpeng Zhang

**Software Defect Prediction**

Combining Feature Subset Selection and Data Sampling for Coping with Highly
Imbalanced Software Data ......................................................... 439
  Kehan Gao, Taghi Khoshgoftaar and Amri Napoli nano

A Software Defect-Proneness Prediction Framework: A new approach using genetic
algorithms to generate learning schemes (S) .................................. 445
  Juan Murillo-Morera and Marcelo Jenkins

Using Time Series Models for Defect Prediction in Software Release Planning (S) ....... 451
  James Tunnell and John Anvik

**Semantic Web**

An Ontology for Describing Security Events ........................................... 455
  Hossein Fani and Ebrahim Bagheri

CARP: Correlation Based Approach for Researcher Profiling (S) ...................... 461
  Hassan Noureddine, Iman Jarkass, Hussein Hazimeh, Omar Abou Khaled and Elena
  Mugellini

APRImora: A Semantic Architecture for Patterns Reuse (S) ........................ 465
  Angélica Aparecida de Almeida Ribeiro, Jugurta Lisboa-Filho, Lucas Francisco Da
  Matta Vegi, Alcione de Paiva Oliveira, Regina Maria Maciel Braga Villela and Emílio
  José de S. Fonseca

**Topic Mining and Specification Mining**

Mining Universal Specification Based on Probabilistic Model ......................... 471
  Deng Chen, Yanduo Zhang, Rongcun Wang, Xun Li, Li Peng and Wei Wei

Topic Matching Based Change Impact Analysis from Feature on User Interface of
Mobile Apps (S) ............................................................................ 477
  Qiwen Zou, Xiangping Chen and Yuan Huang

Learning Folksonomies for Trend Detection in Task-Oriented Dialogues (S) ......... 483
  Gregory Wanderley and Emerson Paraiso

Towards Automatic Requirements Elicitation from Feedback Comments: Extracting
Requirements Topics Using LDA (S) .............................................. 489
  Hitoshi Takahashi, Hiroyuki Nakagawa and Tatsui ro Tsuchiya

**User Experience and Organizational Learning**

MAX: A Method for Evaluating the Post-use User Experience through Cards and a Board 495
  Emanuelle Cavalcante, Luis Rivero and Tayana Conte

Designing Personas with Empathy Map (S) ........................................ 501
  Bruna Ferreira, Williamson Silva, Edson Oliveira and Tayana Conte
An approach to identify relevant subjects for supporting the Learning Scheme creation task (S) ................................................................. 506  
_Huander Tironi, Andre Menolli, Sheila Reinehr and Andreia Malucelli_

**Software Measurement and Metrics**

Using peak analysis for identifying lagged effects between software metrics (S) ............ 512  
_Josee Tasse_

Integration of Software Measurement Supporting Tools: A Mapping Study (S) .............. 516  
_Vinicius S. Fonseca, Monalessa P. Barcellos and Ricardo De A. Falbo_

Toward using Business Process Intelligence to Support Incident Management Metrics  
Selection and Service Improvement (S) .................................................. 522  
_Bianca Trinkenreich, Gleison Santos, Valdemar Confort and Flavia Santoro_

**Software Safety and Security II**

Study on the Accident-causing Model Based on Safety Region and Applications in  
China Railway Transportation System ..................................................... 528  
_Yong Qin, Hui Ma, Miao Du and Limin Jia_

Statically-Guided Fork-based Symbolic Execution for Vulnerability Detection (S) ........... 536  
_Yue Wang, Hao Sun and Qingkai Zeng_

How Does Defect Removal Activity of Developer Vary with Development Experience? (S) 540  
_Reou Ando, Seiji Sato, Chihiro Uchida, Hironori Washizaki, Yoshiaki Fukazawa,  
Sakae Inoue, Hiroyuki Ono, Yoshikku Hanai, Masanobu Kanazawa, Kazutaka Sone,  
Katsushi Namba and Mikihiko Yamamoto_

**Model Transformation and Comparison**

Model Comparison: a Systematic Mapping Study .............................................. 546  
_Lucian Gonçales, Kleinner Farias, Murillo Scholl, Toacy Oliveira and Mauricio Veronez_

Exploring SOA Pattern Performance using Coupled Transformations and Performance  
Models ........................................................................................................... 552  
_Nariman Mani, Dorina Petriu and Murray Woodside_

On the Specification of Model Transformations through a Platform Independent  
Approach (S) .............................................................................................. 558  
_Ana Patricia Magalhaes, Aline Andreude and Rita Suzana Pitangeira Maciel_

**Testing III**

Improved Metrics for Non-Classic Test Prioritization Problems (S) .............................. 562  
_Ziyuan Wang_

An Average Case Time Complexity Estimator for Black-box Functions ....................... 567  
_Duncan Yung, Bill Laboon and Shikuo Chang_
Automatic Detection of Parameter Shielding for Test Case Generation (S) ................ 571
  Jingjian Lin, Jun Yan and Jifeng Xuan

**Petri Nets and Formal Methods**

PIPE+Verifier - A Tool for Analyzing High Level Petri Nets .................... 575
  Su Liu and Xudong He

SANGE – Stochastic Automata Networks Generator. A tool to efficiently predict events
through structured Markovian models (S) .............................................. 581
  Joaquim Assunção, Paulo Fernandes, Lucelene Lopes, Angelika Studeny and
  Jean-Marc Vincent

Modeling and Analyzing Adaptive Energy Consumption for Service Composition (S) .... 585
  Guisheng Fan, Huiqun Yu and Liqiong Chen

Modeling and Analyzing Publish Subscribe Architecture using Petri Nets .............. 589
  Junhua Ding and Dongmei Zhang

**Program Verification**

Flexible and Extensible Runtime Verification for Java ............................. 595
  Chengcheng Xiang, Zhengwei Qi and Walter Binder

Improving the Accuracy of Integer Signedness Error Detection Using Data Flow Analysis 601
  Hao Sun, Chao Su, Yue Wang and Qingkai Zeng

Extracting More Object Usage Scenarios for API Protocol Mining .................... 607
  Deng Chen, Yanduo Zhang, Rongcun Wang, Binbin Qu, Jianping Ju and Wei Wei

**Domain-Specific Languages**

NeoIDL: A Domain-Specific Language for Specifying REST Services ............... 613
  Rodrigo Bonifacio, Thiago M. Castro, Ricardo Fernandes, Alisson Palmeira and Urirá
  Kulesza

A Unified MapReduce Domain-Specific Language for Distributed and Shared Memory
Architectures ...................................................................................... 619
  Daniel Adornes, Dalvan Griebler, Cleverson Ledur and Luiz Gustavo Fernandes

Towards a Metamodel Design Methodology: Experiences from a model transformation
metamodel design ............................................................................... 625
  Ana Patricia Magalhaes, Rita Suzana Pitangueira Maciel and Aline Andrade

**Web Applications and Ontological Engineering**

Finding and Emulating Keyboard, Mouse, and Touch Interactions and Gestures while
Crawling RIA’s ....................................................................................... 631
  Frederik Nakstad, Hironori Washizaki and Yoshiaki Fukazawa

An Oracle based on Image Comparison for Regression Testing of Web Applications .... 639
  Akihiro Hori, Shingo Takada, Haruto Tanno and Morihide Oinuma
Towards the Anonymisation of RDF Data........................................ 646  
Filip Radulovic, Raúl García-Castro and Asuncióón Gómez-Pérez

An Information Retrieval Model using Query Expansion based on Ontologies in the  
Computer Science Domain (S) .................................................. 652  
Bonnie G. Carranza Chávez and Andrés Melgar

Requirements Analysis and Software Architecture

Toward an Architecture for Model Composition Techniques (S) ................. 656  
Kleinner Farias, Lucian Goncales, Murilo Scholl, Toacy Oliveira and Maurício Veronez

JSAN: A Framework to Implement Normative Agents (S) .......................... 660  
Marx L. Viana, Paulo Alencar, Everton T. Guimarães, Francisco J. P. Cunha,  
Donald Cowan and Carlos J. P. Lucena

Quantitative Reasoning of Goal Satisfaction in the i*Framework (S) .......... 666  
Chitra M Subramanian, Aneesh Krishna, Arshinder Kaur and Raj P Gopalan

CQV-UML Tool: a tool for managing the impact of change on UML models (S) ........ 670  
Dhikra Kchaou, Nadia Bouassida and Hanène Ben Abdallah

An evolution management model for multi-level component-based software architectures . 674  
Abderrahman Mokni, Marianne Huchard, Christelle Urtado, Sylvain Vauttier and  
Huaxi Yulin Zhang

Empirical Software Engineering III

Using Learning Styles of Software Professionals to Improve their Inspection Team  
Performance ................................................................. 680  
Anurag Goswami, Gursimran Walia and Abhinav Singh

How do software engineers apply an early usability inspection technique? A qualitative  
study ................................................................. 686  
Natasha Valentim, Tayana Conte, Bernardo José and Rafael Prikladnicki

A Empirical Study on the Status of Software Localization in Open Source Projects (S) ... 692  
Zeyad Alshaikh, Shaikh Mostafa, Xiaoyin Wang and Sen He

Agile Software Development and User Interface

bibin-DA: An Agile Domain Analysis Process and its Industrial Evaluation (S) ........ 696  
Tassio Vale, Iuri Souza, Ivonei Silva and Eduardo Almeida

A Feature-Based Tool-Selection Classification for Agile Software Development (S) .... 700  
Mohsen Taheri and S. Masoud Sadjadi

Adoption of Software Product Line Development to an Environment of Voice User  
Interface (S) ................................................................. 705  
Diógenes R. F. Oliveira, Byron L. D. Bezerra, Elyda L. S. X. Freitas and Alexandre  
M. A. Maciel
Adopting Agile Methods in the Public Sector: A Systematic Literature Review (S) .... 709
Isaque Vacari and Rafael Prikladnicki

**Poster/Demo**

Modeling Framework for Developing and Testing Network Security Techniques against DDoS Attacks (P) .............................................................. 715
Konstantin Borisenko, Ivan Khodol and Andrey Shorov

Natural Language Processing to Quantify Security Effort in the Software Development Lifecycle (P) ............................................................. 716
Constantine Aaron Cois and Rick Kazman

Towards Goal-Oriented Conformance Checking (P) ........................................ 722
Hiroki Horita, Hideaki Hirayama, Yasuyuki Tahara and Akihiko Ohsuga

Image retrieval based on structural and textual context (P) .............................. 725
Sana Fakhfakh Akrout, Mohamed TMAR and Walid MAHDI

Probabilistic Failure-causing Schema in Input-Domain Testing (P) ..................... 726
Ziyuan Wang

CARE: A Computer-Aided Requirements Engineering Tool for Problem-Oriented Software Development (P) ......................................................... 727
Guoyuan Liu, Zhi Li and Zhaofeng Ouyang

ExpOse: Inferring Worst-case Time Complexity by Automatic Empirical Study (P) .... 730
Cody Kinneer, Gregory Kapfhammer, Chris Wright and Phil McMinn

Modeling China Metro Train Route Occlusion Operation Method Based on Time Petri Nets (P) ................................................................. 732
Ye Zhang

Modeling China Metro Train Route Occlusion Operation Method Based on Time Petri Nets (D) ............................................................... 735
Ye Zhang and Yatao Wang

System Architecture of a Train Sensor Network for Ubiquitous Safety Monitoring (P) ... 736
Guoqiang Cai and Mengchu Zhou

System Architecture of a Train Sensor Network for Ubiquitous Safety Monitoring (D) ... 739
Guoqiang Cai

Ana Paula Cavalcanti Furtado, Suzana Sampaio, Erneson Andrade, Ivaldir Junior and Marcos André Wanderley Gomes

**Author’s Index** ................................................................................................. A-1

**Program Committee Reviewers’ Index** .......................................................... A-11

**External Reviewers’ Index** ............................................................................. A-16

**Note:**
(S) indicates a short paper.
(P) indicates a poster, which is not a refereed paper.
(D) indicates a demo.