

# Wednesday, August 29th

## Wednesday - ROOM 4

### SPPI 1 Model-Driven and Agile Software Engineering

Chair: **Dietmar Winkler**

Session Duration: **11:45-13:15**

[START-TIME] [END-TIME]

11:45 12:15

**Exploiting ALM and MDE for supporting Questionnaire-Based Gap Analysis Processes**

*Vincenzo De Simone, Domenico Amalfitano and Anna Rita Fasolino*

12:15 12:45

**Ontology-Supported Design Parameter Management for Change Impact Analysis**

*Jan Novacek, Ali Ahari, Alessandro Cornaglia, Frederik Haxel, Alexander Viehl, Oliver Bringmann and Wolfgang Rosenstiel*

12:45 13:00

**Singing the Praise of Empowerment: Or Paying the Cost of Chaos**

*Helena Holmstrom Olsson and Jan Bosch*

13:00 13:15

**Sustaining Agile Beyond Adoption**

*Leonor Barroca, Peggy Gregory, Kati Kuusinen, Helen Sharp and Raid Alqaisi*

### SPPI 2 Quality Assurance

Chair: **Stefan Biffi**

Session Duration: **14:30-16:00**

[START-TIME] [END-TIME]

14:30 15:00

**Influence of Structured Information in Bug Report Descriptions on IR-based Bug Localization**

*Michael Rath and Patrick Mader*

15:00 15:30

**Challenges Concerning Test Case Specifications in Automotive Software Testing**

*Katharina Juhnke, Matthias Tichy and Frank Houdek*

15:30 15:45

**Re-visiting a Test Taxonomy with Refactoring and Defect-fix Data**

*Steve Counsell, Stephen Swift, Michele Marchesi, Roberto Tonelli and Michael Felderer*

15:45 16:00

**Enabling Compliance Checking Against Safety Standards from SPEM 2.0 Process Models**

*Julieth Patricia Castellanos Ardila, Barbara Gallina and Faiz Ul Muram*

### SPPI 3 Case Studies and Experimentation

Chair: **Rick Rabiser**

Session Duration: **17:00-18:30**

[START-TIME] [END-TIME]

17:00 17:30

**Software Engineering Challenges of Deep Learning**

*Anders Arpteg, Bjorn Brinne, Luka Crnkovic-Friis and Jan Bosch*

17:30 17:45

**A Large Agile Organization on Its Journey Towards DevOps**

*Kati Kuusinen, Veena Balakumar, Sune Chung Jepsen, Simon Hjortshoj Larsen, Thomas August Lemqvist, Admir Muric, Anna Olgaard Nielsen and Oliver Vestergaard*

17:45 18:00

**Effective Online Controlled Experiment Analysis at Large Scale**

*Aleksander Fabijan, Pavel Dmitriev, Helena Holmstrom Olsson and Jan Bosch*

18:00 18:15

**Online Controlled Experimentation at Scale: An Empirical Survey on the Current State of A/B Testing**

*Aleksander Fabijan, Pavel Dmitriev, Helena Holmstrom Olsson and Jan Bosch*

## Wednesday - ROOM 5

### CPS Cyber – Physical Systems

Chair: **Karl-Erwin Grosspietsch**

Session Duration: **11:45-13:15**

[START-TIME] [END-TIME]

11:45 12:10

**Monitoring CPS at Runtime - A Case Study in the UAV Domain**

*Michael Vierhauser, Jane Cleland-Huang, Sean Bayley, Thomas Krismayer, Rick Rabiser and Paul Grunbacher*

12:10 12:35

**Evidence-based Verification of Safety Properties Concerning the Cooperation of Autonomous Agents**

*Marc Spislander and Francesca Saglietti*

12:35 13:00

**Be Prepared: Learning Environment Profiles for Proactive Rule-Based Production Planning**

*Verena Klos, Thomas Gathel and Sabine Glesner*

13:00 13:15

**Towards Co-Simulation of Embedded Platforms and Physics-Based Models**

*Yon Vanommeslaeghe, Paul De Meulenaere, Joachim Denil, Francesco Cosco, Bart Forrier and Jan Croes*

### ES-IoT Embedded Systems and the Internet of Things

Chair: **Panagiotis Katsaros**

Session Duration: **14:30-16:30**

[START-TIME] [END-TIME]

14:30 14:55

**Allocation Optimization for Component-Based Embedded Systems with GPUs**

*Gabriel Campeanu, Jan Carlson and Severine Sentilles*

14:55 15:20

**A Smart City Application Modeling Framework: A Case Study on Re-engineering a Smart Retail Platform**

*Paraskevi Smiari and Stamatia Bibi*

15:20 15:40

**NUMA Awareness: Improving Thread and Memory Management**

*Maria Patrou, Kenneth Kent, Gerhard Dueck, Charlie Gracie and Aleksandar Micic*

15:40 16:05

**Security and Privacy Concerns in Connected Cars: A Systematic Mapping Study**

*Prabhat Ram, Jouni Markkula, Ville Friman and Arian Raz*

16:05 16:25

**Towards Modeling Patterns for Embedded Software Industry: Feedback from the Field**

*Deniz Akdur, Onur Demirors and Bilge Say*

**DSLMBD Domain Specific Languages and Model-Based Development****Chair:** Manuel Wimmer

Session Duration: 17:00-18:30

[START-TIME] [END-TIME]

17:00 17:30

**Best Practices for Domain-Specific Modeling. A Systematic Mapping Study***Gerald Czech, Michael Moser and Josef Pichler*

17:30 18:00

**Model-Based Testing of Software-Based System Functions***Imke Drave, Steffen Hillemecher, Timo Greifenberg, Bernhard Rumpe, Andreas Wortmann, Matthias Markthaler and Stefan Kriebel***Wednesday - ROOM 6****SM1 Source code analysis****Chair:** Onur Demirors

Session Duration: 11:45-13:15

[START-TIME] [END-TIME]

11:45 12:00

**Fault-Prone Java Method Analysis Focusing on Pair of Local Variables with Confusing Names***Keiichiro Tashima, Hirohisa Aman, Sousuke Amasaki, Tomoyuki Yokogawa and Minoru Kawahara*

12:00 12:30

**Impact of Design Pattern Implementation Variants on the Retrieval Effectiveness of a Recovery Tool: An Exploratory Study***Andrea De Lucia, Vincenzo Deufemia, Carmine Gravino and Michele Risi*

12:30 13:00

**Exploring the Use of Rapid Type Analysis for Detecting the Dead Method Smell in Java Code***Simone Romano and Giuseppe Scanniello***SM2 Management and design****Chair:** Giuseppe Scanniello

Session Duration: 14:30-16:30

[START-TIME] [END-TIME]

14:30 15:00

**The Effects of Vectorization Methods on Non-Functional Requirements Classification***Sousuke Amasaki and Pattara Leelaprute*

15:00 15:30

**Realising Individual and Team Capability in Agile Software Development: A Qualitative Investigation***Emilia Mendes, Davi Viana, Sai Datta Vishnubhotla and Lars Lundberg*

15:30 16:00

**Exploring Reuse Levels in ERP projects in Search of an Effort Estimation Approach***Onur Demirors and Neslihan Kucukate Omural*

16:00 16:30

**Component Selection in Software Engineering - Which Attributes are the Most Important in the Decision Process?***Panagiota Chatzipetrou, Emil Alegroth, Efi Papatheocharous, Markus Borg, Tony Gorschek and Krzysztof Wnuk***SM3 Software Teams and Innovation****Chair:** Carmine Gravino

Session Duration: 17:00-18:30

[START-TIME] [END-TIME]

17:00 17:15

**Anchorvideos as a Means to Engage with Software and Technology Innovations in Large Organizations***Verena Pohl, Harriet Kasper, Monika Kochanowski and Tobias Krause*

17:15 17:30

**Using Self-Healing to Increase Robustness of Handling In-Browser Third-Party Content***Sara Nadi, Jimmy Hedstrom and Miroslaw Staron*

17:30 18:00

**Linking Personality Traits and Interpersonal Skills to Gamification Awards***Maria Papoutsoglou, Georgia Kapitsaki and Nikolaos Mittas*

18:00 18:15

**DKDOnto: An Ontology to Support Software Development with Distributed Teams***Rodrigo G.C. Rocha, Arthur Araujo, Diogo Cordeiro, Ryan R. Azevedo and Daliton da Silva*

18:15 18:30

**Are We Excellent Yet? Perceptions of Software 'Test Centre of Excellence' Within a Financial Institution***Michal Dolezel and Jana Kroppova*

# Thursday, August 30th

## Thursday - ROOM 4

EsPreSSE **Estimation and Prediction in Software and Systems Engineering**

Chair: **Miroslaw Staron**

Session Duration: **11:45-13:15**

[START-TIME] [END-TIME]

11:45 12:00

**Enhanced Feature Selection Using Word Embeddings for Self-Admitted Technical Debt Identification**

*Jernej Flisar and Vili Podgorelec*

12:00 12:15

**Structural Quality Metrics as Indicators of the Long Method Bad Smell: An Empirical Study**

*Sofia Charalampidou, Elvira Maria Arvanitou, Apostolos Ampatzoglou, Paris Avgeriou, Alexander Chatzigeorgiou and Ioannis Stamelos*

12:15 12:30

**Code Cleaning for Defect Prediction: A Cautionary Tale**

*Thomas Shippey, David Bowes, Steve Counsell and Tracy Hall*

12:30 13:00

**An Exploratory Study of Search Based Training Data Selection For Cross Project Defect Prediction**

*Seyedrebrvar Hosseini and Burak Turhan*

A-BPM **Advancing Business Process Management**

Chair: **Oktay Turetken**

Session Duration: **14:30-16:30**

[START-TIME] [END-TIME]

14:30 15:00

**Categories of Change Triggers in Business Processes**

*Angelika Kaplan, Kiana Busch, Anne Koziulek and Robert Heinrich*

15:00 15:30

**Advanced Queueing Models for Quantitative Business Process Analysis**

*Remco Dijkman, Ivo Adan and Sander Peters*

15:30 15:45

**Considering Non-sequential Control Flows for Process Prediction with Recurrent Neural Networks**

*Andreas Metzger and Adrian Neubauer*

15:45 16:15

**Integrating Requirements and Business Process Models in BPM Projects**

*Carina Alves, George Valença and Glória Fraga*

16:15 16:45

**A Toolbox for the Development and Implementation of Value Based Care Pathways**

*Irene Vanderfeesten, Debora Katerberg, Oktay Turetken, Ramon van de Ven*

## Thursday - ROOM 5

MoLS **Monitoring in Large-Scale Software Systems**

Chair: **Rick Rabiser**

Session Duration: **11:45-12:15**

[START-TIME] [END-TIME]

11:45 12:00

**Flexible System-level Monitoring of Heterogeneous Big Data Streaming Systems**

*Holger Eichelberger*

12:00 12:15

**Incremental Verification of Complex Event Processing Applications for System Monitoring**

*Andreas Metzger, Christian Reinartz and Klaus Pohl*

CVDCPS **Consistency in the View-based Development of Cyber-Physical Systems**

Chair: **Sandro Koch**

Session Duration: **14:30-16:30**

[START-TIME] [END-TIME]

14:30 14:55

**An Empirical Study on the Current and Future Challenges of Automotive Software Release and Configuration Management**

*Houssein Guissouma, Heiko Klare, Eric Sax and Erik Burger*

14:55 15:20

**Role-based Runtime Model Synchronization**

*Christopher Werner, Hendrik Schon, Thomas Kuhn, Sebastian Gotz and Uwe Assmann*

15:20 15:45

**A Knowledge-based Decision Support System for Micro and Nano Manufacturing Process Chains**

*Tobias Muller, Veit Hagenmeyer, Andreas Schmidt, Steffen Scholz and Ahmed Elkaseer*

15:45 16:00

**A Consistent View of the Smart Grid: Bridging the Gap between IEC CIM and IEC 61850**

*Artem Schumilin, Clemens Duepmeier, Karl-Uwe Stucky and Veit Hagenmeyer*

16:00 16:15

**A Methodology for Domain-Spanning Change Impact Analysis**

*Robert Heinrich, Kiana Busch and Sandro Koch*

16:15 16:30

**Multi-Level, Viewpoint-Oriented Engineering of Cyber-Physical Production Systems: An Approach Based on Industry 4.0 and Semantic Web Standards**

*Udo Kannengiesser and Harald Muller*

## Thursday - ROOM 6

**EBEDE1**      **Keynote Session: Pavel Dmitriev**  
**Chair:**      **Jan Bosch**  
Session Duration: **10:00-11:00**

**EBEDE2**      **Evidence Based and Experiment Driven Engineering**  
**Chair:**      **Helena Holmstrom Olsson**  
Session Duration: **11:45-13:15**

[START-TIME]	[END-TIME]	
11:45	12:15	<b>Current State of Continuous Experimentation: A Systematic Mapping Study</b> <i>Florian Auer and Michael Felderer</i>
12:15	12:45	<b>Continuous Experimentation in Mobile Game Development</b> <i>Sezin Yaman, Tommi Mikkonen and Riku Suomela</i>
12:45	13:00	<b>Continuous Experimentation Scenarios: A Case Study in e-Commerce</b> <i>Rasmus Ros and Elizabeth Bjarnason</i>
13:00	13:15	<b>Objectives and Challenges of the Utilization of User-Interaction Data in Software Development</b> <i>Sampo Suonsyrja, Outi Sievi-Korte, Kari Systa, Terhi Kilamo and Tommi Mikkonen</i>

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**SA+BDA**      **Software and Big Data Analytics**  
**Chair:**      **Michael Felderer**  
Session Duration: **14:30-16:30**

[START-TIME]	[END-TIME]	
14:30	14:55	<b>A Collection of Software Engineering Challenges for Big Data System Developm</b> <i>Oliver Hummel, Holger Eichelberger, Andreas Giloj, Dominik Werle and Klaus Schmid</i>
14:55	15:20	<b>A Quality Model for Actionable Analytics in Rapid Software Development</b> <i>Silverio Martinez-Fernandez, Andreas Jedlitschka, Liliana Guzman and Anna Maria Vollmer</i>
15:20	15:45	<b>A Large-Scale Study on Source Code Reviewer Recommendation</b> <i>Jakub Lipcak and Bruno Rossi</i>
15:45	16:10	<b>CrossSim: Exploiting Mutual Relationships to Detect Similar OSS Projects</b> <i>Phuong T. Nguyen, Juri Di Rocco, Riccardo Rubei and Davide Di Ruscio</i>
16:10	16:25	<b>An Automated Approach for Classifying Reverse-Engineered and Forward-Engineered UML Class Diagrams</b> <i>Mohd Hafeez Osman, Truong Ho-Quang and Michel Chaudron</i>

# Friday, August 31st

## Friday - ROOM 4

### SEaTeD1 Technical Debt in Architecture and Documentation

Chair: **Apostolos Ampatzoglou**

Session Duration: **11:15-13:15**

[START-TIME]	[END-TIME]	
11:15	11:32	<b>A Case Study of the Effects of Architecture Debt on Software Evolution Effort</b> <i>Will Snipes, Sunil Karlekar and Ran Mo</i>
11:32	11:49	<b>Exploring the Relationship between Software Modularity and Technical Debt</b> <i>Peggy Skiada, Apostolos Ampatzoglou, Elvira Maria Arvanitou, Alexander Chatzigeorgiou and Ioannis Stamelos</i>
11:49	12:14	<b>Towards an Architectural Debt Index</b> <i>Riccardo Roveda, Francesca Arcelli Fontana, Ilaria Pigazzini and Marco Zanoni</i>
12:14	12:31	<b>An Architectural Smells Detection Tool for C and C++ Projects</b> <i>Andrea Biaggi, Francesca Arcelli Fontana and Riccardo Roveda</i>
12:31	12:56	<b>Integrating Traceability Within the IDE to Prevent Requirements Documentation Debt</b> <i>Sofia Charalampidou, Apostolos Ampatzoglou, Alexander Chatzigeorgiou and Nikolaos Tsiridis</i>

### SEaTeD2 New Perspectives on Technical Debt

Chair: **Will Snipes**

Session Duration: **14:30-15:30**

[START-TIME]	[END-TIME]	
14:30	14:55	<b>A Study of Factors that Lead Development Teams to Incur Technical Debt in Software Projects</b> <i>Nicolli Rios, Rodrigo Oliveira Spinola, Manoel G. de Mendonça Neto and Carolyn Seaman</i>
14:55	15:12	<b>Identifying Technical Debt in Database Normalization Using Association Rule Mining</b> <i>Masheh Albarak, Muna Alrazgan and Rami Bahsoon</i>
15:12	15:29	<b>Challenges in Assessing Technical Debt based on Dynamic Runtime Data</b> <i>Marcus Ciolkowski, Liliana Guzman, Adam Trendowicz and Anna Maria Vollmer</i>

## Friday - ROOM 5

### SMSE1 Systematic Mappings

Chair: **Steve Counsell**

Session Duration: **11:15-13:15**

[START-TIME]	[END-TIME]	
11:15	11:45	<b>A Systematic Mapping of Software Engineering Approaches to Develop Big Data Systems</b> <i>Rodrigo Laigner, Marcos Kalinowski, Sergio Lifschitz, Rodrigo SalvadorMonteiro and Daniel de Oliveira</i>
11:45	12:15	<b>A Systematic Mapping Study on Security in Agile Requirements Engineering</b> <i>Hugo Villamizar, Marcos Kalinowski, Marx Viana and Daniel Mendez Fernandez</i>
12:15	12:45	<b>A Systematic Mapping Study on API Documentation Generation Approaches</b> <i>Kristian Nybom, Adnan Ashraf and Ivan Porres</i>
12:45	13:15	<b>Safety-Critical Systems and Agile Development: A Mapping Study</b> <i>Rashidah Kasauli, Eric Knauss, Benjamin Kanagwa, Agneta Nilsson and Gul Calikii</i>

### SMSE2 Surveys and Studies

Chair: **Stephen Swift**

Session Duration: **14:30-15:30**

[START-TIME]	[END-TIME]	
14:30	15:00	<b>Towards a Terminology Unification in Software Interoperability</b> <i>Diana Maria Torres Ricourte, Monica Katuska Villavicencio Cabezas and Carlos Mario Zapata Jaramillo</i>
15:00	15:30	<b>Smart Cities Evaluation – A Survey of Performance and Sustainability Indicators</b> <i>Dessislava Petrova-Antonova and Sylvia Ilieva</i>

## Friday - ROOM 6

### CBSMS Cloud-Based Systems and MicroServices

Chair: **Petr Hnetyuka**

Session Duration: **11:15-13:15**

[START-TIME]	[END-TIME]	
11:15	11:45	<b>Hierarchical Multi-tenancy in Business to Business Software Services</b> <i>Adeniyi Abdul and Julian Bass</i>
11:45	12:15	<b>Performance and Energy-based Cost Prediction of Virtual Machines Auto-Scaling in Clouds</b> <i>Mohammad Aldossary and Karim Djemame</i>
12:15	12:35	<b>Towards Generating Elastic Microservices: A Declarative Specification for Consistent Elasticity Configurations</b> <i>Floriment Klinaku and Vincenzo Ferme</i>
12:35	12:55	<b>Towards An End-to-End Architecture for Run-time Data Protection in the Cloud</b> <i>Nazila Gol Mohammadi, Zoltan Adam Mann, Andreas Metzger, Maritta Heisel and James Greig</i>
12:55	13:15	<b>Abstract Fog in the Bottle – Trends of Computing in History and Future</b> <i>Marcus Hilbrich and Markus Frank</i>

## WORK IN PROGRESS

Chair: **Konrad Klöckner**

Session Duration: **16:00-17:00**

[START-TIME]	[END-TIME]	
16:00	16:10	<b>Runtime Mission Reconfiguration via Decentralized and Distributed Architectures</b> <i>Gabriella Fiore, Davide Di Ruscio, Patrizio Pelliccione</i>
16:10	16:20	<b>Model Transformation of Application Software Component from Classic to Adaptive AUTOSAR: An Approach to Migrate Software Components</b> <i>Sangita De, Michael Niklas, Juergen Mottok, Premek Brada</i>
16:20	16:30	<b>An In-Vehicle Contact-less Heartbeat Monitoring System Using UWB Sensor</b> <i>Nao Igawa, Tomoyuki Yokogawa, Yoichiro Sato, Kazutami Arimoto, Isao Kayano</i>
16:30	16:40	<b>Towards Mitigating Security Risks in Cyber Physical System</b> <i>Maryam Zahid, Irum Inayat, Faiza Allah Bukhsh</i>
16:40	16:50	<b>Towards Advanced Resource Constructs in Business Process Simulation</b> <i>Sander Peters, Remco Dijkman and Paul Grefen</i>
16:50	17:00	<b>Microservices, Continuous Architecture, and Technical Debt Interest</b> <i>Valentina Lenarduzzi, Davide Taibi</i>