

Table of Contents – Part II

Engineering Virtualized Systems

Introduction to Track on Engineering Virtualized Services	1
<i>Reiner Hähnle and Einar Broch Johnsen</i>	
Erlang-Style Error Recovery for Concurrent Objects with Cooperative Scheduling	5
<i>Georg Göri, Einar Broch Johnsen, Rudolf Schlatte, and Volker Stolz</i>	
Fault Model Design Space for Cooperative Concurrency	22
<i>Ivan Lanese, Michael Lienhardt, Mario Bravetti, Einar Broch Johnsen, Rudolf Schlatte, Volker Stolz, and Gianluigi Zavattaro</i>	
Programming with Actors in Java 8	37
<i>Behrooz Nobakht and Frank S. de Boer</i>	
Contracts in CML	54
<i>Jim Woodcock, Ana Cavalcanti, John Fitzgerald, Simon Foster, and Peter Gorm Larsen</i>	
Distributed Energy Management Case Study: A Formal Approach to Analyzing Utility Functions	74
<i>Aida Čaušević, Cristina Secleanu, and Paul Pettersson</i>	
Towards the Typing of Resource Deployment	88
<i>Elena Giachino and Cosimo Laneve</i>	
Static Inference of Transmission Data Sizes in Distributed Systems	104
<i>Elvira Albert, Jesús Correas, Enrique Martín-Martín, and Guillermo Román-Díez</i>	
Fully Abstract Operation Contracts	120
<i>Richard Bubel, Reiner Hähnle, and Maria Pelevina</i>	

Statistical Model Checking

Statistical Model Checking Past, Present, and Future (Track Introduction)	135
<i>Kim G. Larsen and Axel Legay</i>	
An Effective Heuristic for Adaptive Importance Splitting in Statistical Model Checking	143
<i>Cyrille Jegourel, Axel Legay, and Sean Sedwards</i>	

A Formalism for Stochastic Adaptive Systems	160
<i>Benoît Boyer, Axel Legay, and Louis-Marie Traonouez</i>	
A Review of Statistical Model Checking Pitfalls on Real-Time Stochastic Models	177
<i>Dimitri Bohlender, Harold Bruintjes, Sebastian Junges, Jens Katelaan, Viet Yen Nguyen, and Thomas Noll</i>	
Formal Analysis of the Wnt/ β -catenin Pathway through Statistical Model Checking	193
<i>Paolo Ballarini, Emmanuelle Gallet, Pascale Le Gall, and Matthieu Manceny</i>	
Battery-Aware Scheduling of Mixed Criticality Systems	208
<i>Erik Ramsgaard Wognsen, René Rydhof Hansen, and Kim Guldstrand Larsen</i>	
Using Statistical Model Checking for Measuring Systems	223
<i>Radu Grosu, Doron Peled, C.R. Ramakrishnan, Scott A. Smolka, Scott D. Stoller, and Junxing Yang</i>	
Blocking Advertisements on Android Devices Using Monitoring Techniques	239
<i>Khalil El-Harake, Yliès Falcone, Wassim Jerad, Mattieu Langet, and Mariem Mamlouk</i>	
Monitoring with Data Automata	254
<i>Klaus Havelund</i>	
Risk-Based Testing	
Risk-Based Testing (Track Introduction)	274
<i>Michael Felderer, Marc-Florian Wendland, and Ina Schieferdecker</i>	
A Technique for Risk-Based Test Procedure Identification, Prioritization and Selection	277
<i>Fredrik Seehusen</i>	
A Risk Assessment Framework for Software Testing	292
<i>Michael Felderer, Christian Haisjackl, Viktor Pekar, and Ruth Breu</i>	
Data Driven Testing of Open Source Software	309
<i>Inbal Yahav, Ron S. Kenett, and Xiaoying Bai</i>	
Combining Risk Analysis and Security Testing	322
<i>Jürgen Großmann, Martin Schneider, Johannes Viehmann, and Marc-Florian Wendland</i>	

Risk-Based Vulnerability Testing Using Security Test Patterns	337
<i>Julien Botella, Bruno Legeard, Fabien Peureux, and Alexandre Vernotte</i>	

Medical Cyber-Physical Systems

Medical Cyber-Physical Systems (Track Introduction)	353
<i>Ezio Bartocci, Sicun Gao, and Scott A. Smolka</i>	
Compositional, Approximate, and Quantitative Reasoning for Medical Cyber-Physical Systems with Application to Patient-Specific Cardiac Dynamics and Devices	356
<i>Radu Grosu, Elizabeth Cherry, Edmund M. Clarke, Rance Cleaveland, Sanjay Dixit, Flavio H. Fenton, Sicun Gao, James Glimm, Richard A. Gray, Rahul Mangharam, Arnab Ray, and Scott A. Smolka</i>	
On Quantitative Software Quality Assurance Methodologies for Cardiac Pacemakers	365
<i>Marta Kwiatkowska, Alexandru Mereacre, and Nicola Paoletti</i>	
Model Checking Hybrid Systems (Invited Talk)	385
<i>Edmund M. Clarke and Sicun Gao</i>	
Challenges for the Dynamic Interconnection of Medical Devices	387
<i>Martin Leucker</i>	
Temporal Logic Based Monitoring of Assisted Ventilation in Intensive Care Patients	391
<i>Sara Bufo, Ezio Bartocci, Guido Sanguinetti, Massimo Borelli, Umberto Lucangelo, and Luca Bortolussi</i>	

Scientific Workflows

Track Introduction: Scientific Workflows	404
<i>Joost N. Kok, Anna-Lena Lamprecht, Kenneth J. Turner, and Katy Wolstencroft</i>	
Meta-analysis of Disjoint Sets of Attributes in Large Cohort Studies	407
<i>Jonathan K. Vis and Joost N. Kok</i>	
Towards a Flexible Assessment of Climate Impacts: The Example of Agile Workflows for the ci:grasp Platform	420
<i>Samih Al-Areqi, Steffen Kriewald, Anna-Lena Lamprecht, Dominik Reusser, Markus Wrobel, and Tiziana Margaria</i>	
A Visual Programming Approach to Beat-Driven Humanoid Robot Dancing	436
<i>Vid Podpečan</i>	

jABCstats: An Extensible Process Library for the Empirical Analysis of jABC Workflows	449
<i>Alexander Wickert and Anna-Lena Lamprecht</i>	

Automatic Annotation of Bioinformatics Workflows with Biomedical Ontologies	464
<i>Beatriz García-Jiménez and Mark D. Wilkinson</i>	

Evaluation and Reproducibility of Program Analysis

Evaluation and Reproducibility of Program Analysis (Track Introduction)	479
<i>Markus Schordan, Welf Löwe, and Dirk Beyer</i>	

SWEET – A Tool for WCET Flow Analysis (Extended Abstract)	482
<i>Björn Lisper</i>	

Test-Driving Static Analysis Tools in Search of C Code Vulnerabilities II (Extended Abstract)	486
<i>George Chatzieleftheriou, Apostolos Chatzopoulos, and Panagiotis Katsaros</i>	

Construction of Abstract Domains for Heterogeneous Properties (Position Paper)	489
<i>Xavier Rival, Antoine Toubhans, and Bor-Yuh Evan Chang</i>	

Verification of Polyhedral Optimizations with Constant Loop Bounds in Finite State Space Computations	493
<i>Markus Schordan, Pei-Hung Lin, Dan Quinlan, and Louis-Noël Pouchet</i>	

The Guided System Development Framework: Modeling and Verifying Communication Systems	509
<i>Jose Quaresma, Christian W. Probst, and Flemming Nielson</i>	

Processes and Data Integration in the Networked Healthcare

Processes and Data Integration in the Networked Healthcare (Track Introduction)	524
<i>Tiziana Margaria and Christoph Rasche</i>	

Simple Management of High Assurance Data in Long-Lived Interdisciplinary Healthcare Research: A Proposal	526
<i>Tiziana Margaria, Barry D. Floyd, Rodolfo Gonzalez Camargo, Anna-Lena Lamprecht, Johannes Neubauer, and Marilia Seelaender</i>	

Domain-Specific Business Modeling with the Business Model Developer	545
<i>Steve Boßelmann and Tiziana Margaria</i>	

Dr. Watson? Balancing Automation and Human Expertise in Healthcare Delivery	561
<i>Mark Gaynor, George Wyner, and Amar Gupta</i>	

Semantic Heterogeneity in the Formal Development of Complex Systems

Semantic Heterogeneity in the Formal Development of Complex Systems: An Introduction	570
<i>J. Paul Gibson and Idir Ait-Sadoune</i>	

Modelling and Verifying an Evolving Distributed Control System Using an Event-Based Approach	573
<i>Christian Attiogbé</i>	

Requirements Driven Data Warehouse Design: We Can Go Further	588
<i>Selma Khouri, Ladjel Bellatreche, Stéphane Jean, and Yamine Ait-Ameur</i>	

On Implicit and Explicit Semantics: Integration Issues in Proof-Based Development of Systems Version to Read – Version to Read	604
<i>Yamine Ait-Ameur, J. Paul Gibson, and Dominique Méry</i>	

Industrial Track

The Technological and Interdisciplinary Evolution in Machine and Plant Engineering – Industry 4.0	619
<i>Axel Hessenkämper</i>	

Doctoral Symposium and Poster Session

Integrated Code Motion and Register Allocation	621
<i>Gergő Barany</i>	

On the Algebraic Specification and Verification of Parallel Systems	623
<i>Nikolaos Triantafyllou, Katerina Ksystra, and Petros Stefaneas</i>	

Property-Specific Benchmark Generation	625
<i>Maren Geske</i>	

Steering Active Automata Learning with Model-Driven Development ...	627
<i>Oliver Bauer</i>	

Generation of Domain-Specific Graphical Development Tools Targeting
Heterogeneous Platforms 630
 Michael Lybecait and Dawid Kopetzki

Living Canvas 634
 Barbara Steffen

Feedback-Based Recognition of Human Identities Using Color and
Depth Data 636
 Frederik Gossen

Real Time Standardization Process Management 639
 Axel Hessenkämper

Author Index 641