

PRELIMINARY PROGRAM - SOFSEM 2018 / KREMS a.d. DONAU

January 29 – February 2, 2018 (vs. 15 November 2017)

MONDAY (January 29, 2018)

09.00-10.30 Registration

10.30-11.00 **Opening/speeches** (A Min Tjoa and others)

11.00-12.30 **Keynote Lecture:** Georg Gottlob (Oxford University)
Swift Logic for Big Data and Knowledge Graphs -Overview of Requirements, Language, and System-

12.30-14.30 Lunch/break

14.30-16.00 **Invited Lecture:** Manfred Broy (Bavarian Center for Digitization and TU München)
On Architecture Specification

16.00-16.30 Break

16.30-18.00 Session 1: Network Science and Parameterized Complexity

- *The Parameterized Complexity of Centrality Improvement in Networks*
Clemens Hoffmann (TU Berlin), Hendrik Molter (TU Berlin), Manuel Sorge (TU Berlin / Ben-Gurion U Beer Sheva)
- *Local Structure Theorems for Erdős–Rényi Graphs and their Algorithmic Applications*
Jan Dreier (RWTH Aachen), Philipp Künke (RWTH Aachen), Ba Le Xuan (North Bangkok), Peter Rossmanith (RWTH Aachen)
- *Target Set Selection Parameterized by Clique-Width and Maximum Threshold*
Tim A. Hartmann (RWTH Aachen)

Session 2: Model-based Software Engineering

- *Combining Versioning and Metamodel Evolution in the ChronoSphere Model Repository*
Martin Haeusler (Innsbruck), Thomas Trojer (Txture GmbH), Johannes Kessler (Innsbruck), Matthias Farwick (Txture GmbH), Emmanuel Nowakowski (Innsbruck), Ruth Breu (Innsbruck)
- *Automated Change Propagation from Source Code to Sequence Diagrams*
Karol Rástočný, Andrej Mlynčár (Slovak U of Technology, Bratislava)
- *Multi-Paradigm Architecture Constraint Specification & Configuration Based on Graphs and Feature Models*
Sahar Kallel (LIRMM, CNRS and U Montpellier), Chouki Tibermacine (LIRMM, CNRS, and U Montpellier), Ahmed Hadj Kacem (ReDCAD, Univ Sfax, Tunisia), Christophe Dony (LIRMM, CNRS, U Montpellier).

18.30 **Welcome reception** (at Danube University Krems)

TUESDAY (January 30, 2018)

09.00-10.30 **Invited Lecture:** Michel Chaudron (Chalmers / Gotenburg University)
The Quest for Effective Modeling of Software Design

10.30-11.00 Break

11.00-12.30 **Session 3: Computational Models and Complexity**

- *Lower Bounds and Hierarchies for Quantum Memoryless Communication Protocols and Quantum Ordered Binary Decision Diagrams with Repeated Test*
Farid Ablayev (Kazan), Andris Ambainis (Riga), Kamil Khadiev (Riga and Kazan), Aliya Khadieva (Kazan)
- *Computational Complexity of Atomic Chemical Reaction Networks*
David Doty (UC Davis), Shaopeng Zhu (U Maryland)
- *Conjugacy of One-dimensional One-sided Cellular Automata is Undecidable*
Joonatan Jalonen (Turku), Jarkko Kari (Turku)

Session 4: Software Quality Assurance and Transformation

- *Formal Verification and Safety Assessment of a Hemodialysis Machine*
Shahid Khan (SEECS, NUST), Osman Hasan (SEECS, NUST), Atif Mashkoor (Software Competence Center Hagenberg)
- *Automatic Decomposition of Java Open Source Pull Requests: a Replication Study*
Victor Freire, João Brunet, Jorge C. A. De Figueiredo (UFCEG, Brazil)
- *Transformation of OWL2 Property Axioms to Groovy*
Bogumila Hnatkowska, Pawel Woroniecki (Wroclaw)

12.30-14.30 Lunch/break

14.30-16.00 **Invited Lecture:** Monika Henzinger (University of Vienna)
The State of the Art in Dynamic Graph Algorithms

16.00-16.30 Break

16.30-18.00 **Session 5: Graph Structure and Computation**

- *Simple Paths and Cycles Avoiding Forbidden Paths*
Benjamin Mommége (Inria Lille)
- *External Memory Algorithms for Finding Disjoint Paths in Undirected Graphs*
Maxim Babenko (Moscow, and Yandex LLC), Ignat Kolesnichenko (Moscow, and Yandex LLC)
- *On Range and Edge Capacity in the Congested Clique*
Tomasz Jurdziński (Wroclaw), Krzysztof Nowicki (Wroclaw)

Session 6: Business Processes, Protocols, and Mobile Networks

- *Global vs. Local Semantics of BPMN 2.0 OR-Join*
Flavio Corradini, Chiara Muzi, Barbara Re, Lorenzo Rossi, and Francesco Tiezzi (Camerino)
- *AODVv2: Performance vs. Loop Freedom*
Mojgan Kamali (Abo Akademi, Turku), Massimo Merro (Verona), Alice Dal Corso (Verona)
- *Multivendor Deployment Integration for Future Mobile Networks*
Manuel Pérez (Nokia Bell Labs), Tímea László (Nokia Bell Labs), Norbert Pataki (Eötvös Loránd University), Csaba Rotter (Nokia Bell Labs), Csaba Szalai (Nokia Bell Labs).

18:30 **Social program:** Guided Tour – City Walk with a night watchman (Krems a./d.Donau)
Meeting Point at the registration of the conference venue

WEDNESDAY (January 31, 2018)

09.00-10.30 **Invited Lecture:** Danny Weyns (KU Leuven)
Self-Managing Internet of Things

10.30-11.00 Break

11.00-12.30 **Session 7: Mobile Robots and Server Systems**

- *Patrolling a Path Connecting Set of Points with Unbalanced Frequencies of Visits*
Hoda Chuangpishit (Toronto), Jurek Czyzowicz (UQO Gatineau), Leszek Gasieniec (Liverpool), Konstantinos Georgiou (Toronto), Tomasz Jurdziński (Wrocław), and Evangelos Kranakis (Carleton, Ottawa)
- *Exploring Graphs with Time Constraints by Unreliable Collections of Mobile Robots*
Jurek Czyzowicz (UQO Gatineau), Maxime Godon (UQO Gatineau), Evangelos Kranakis (Carleton, Ottawa), Arnaud Labourel (LIF Marseille and CNRS), and Euripides Markou (U Thessaly)
- *The k -Server Problem with Advice in d Dimensions and on the Sphere*
Elisabet Burjons (ETH Zürich), Dennis Komm (ETH Zürich), Marcel Schöngens (Lugano)

Session 8: Automata, Complexity, Completeness

- *Deciding Universality of $ptNFAs$ is PSpace-Complete*
Tomas Masopust (Brno), Markus Krötzsch (TU Dresden)
- *Theoretical Aspects of Symbolic Automata*
Hellis Tamm (Tallinn), Margus Veanes (Microsoft Research)
- *Complete algorithms for algebraic strongest postconditions and weakest preconditions in polynomial ODE's*
Michele Boreale (Firenze)

12.30-14.30 Lunch/break

- 15.00 **Social program**
Visit of the winery *Sandgrube 13* with wine tasting (Krems a/d Donau)
Meeting Point at the registration of the conference venue, bus transfer to winery and from there to the conference dinner.
- 18.30 **Conference dinner** (Römerhalle) and OCG Incentive Award FH 2017
Bus transfer back to Donau Universität Krems/conference venue: 21.30 and 22.30

THURSDAY (February 1, 2018)

09.00-10.30 **Invited Lecture:** Thomas Eiter (TU Wien)
LARS: A Logic-based framework for Analytic Reasoning over Streams

10.30-11.00 Break

11.00-12.30 Session 9: Recognition and Generation

- *Influence of Body Postures on Biometric User Authentication on Mobile Devices*
Kamil Burda, Daniela Chuda (STUBA, Slovakia)
- *Michiko: Poem Models used in Automated Haiku Poetry Generation*
Miroslava Hrešková, Kristína Machová (TUKE, Slovakia)

Session 10: Optimization, Probabilistic Analysis, and Sorting

- *House Allocation Problems with Existing Tenants and Priorities for Teacher Recruitment*
Ana Paula Tomás (Porto)
- *Runtime Distributions and Criteria for Restarts*
Jan-Hendrik Lorenz (Ulm)
- *Inversions from Sorting with Distance-based Errors*
Barbara Geissmann (ETH Zürich), Paolo Penna (ETH Zürich)

12.30-14.15 Lunch/break

14.30-15.15 Student Research Forum

- *Parameterized Algorithms for Conflict-free Colorings of Graphs*
I Vinod Reddy (IIT Gandhinagar)
- *Implementation of the algorithm for testing an automaton for synchronization in linear expected time*
Pavel Ageev (Ural Federal University)
- *Static closures for functional languages*
Miroslav Kratochvíl and David Bednárek (Charles University, Prague)
- *Lambda Calculus as a Tool for Metaprogramming in C++*
Vít Šefl (Charles University, Prague)
- *Criticality of Components in Service-Oriented Distributed Systems*
Maxim Tschumak (Zalando SE, Germany), Hessler Axel (TU Berlin)
- *Confident Iterative Learning in Computational Learning Theory*
Vanja Duskoc (TU Wien)
- *Attacking Quantum Hashing. Protocols and their Cryptanalysis*

Mansur Ziatdinov (Kazan Federal University)

15.15-16.00 **Posters/Break**

16.00-17.30 **Session 11: Filters, Configurations, and Picture Encoding**

- *An Optimization Problem Related to Bloom Filters with Bit Patterns*
Peter Damaschke (Chalmers U), Alexander Schliep (Chalmers U)
- *Nivat's Conjecture Holds for Sums of Two Periodic Configurations*
Michal Szabados (Turku)
- *Encoding pictures with maximal codes of pictures*
Marcella Anselmo (Salerno), Dora Giammarresi (Roma), Maria Madonia (Catania)

Session 12: Machine Learning

- *ARCID: A New Approach to Deal with Imbalanced Datasets Classification*
Safa Abdellatif (University of Tunis El Manar), Mohamed Ali Ben Hassine (University of Tunis El Manar), Sadok Ben Yahia (University of Tunis El Manar), Amel Bouzeghoub (TELECOM SudParis, France)
- *Fake Review Detection via Exploitation of Spam Indicators and Reviewer Behavior Characteristics*
Ioannis Dematis (Aristotle University of Thessaloniki), Eirini Karapistoli (CapriTech Limited, UK), Athena Vakali (Aristotle University of Thessaloniki)
- *Spatial Gradual Patterns: Application to the Measurement of Potentially Avoidable Hospitalizations*
Tu Ngo (USTH, Vietnam), Vera Georgescu (CHU Montpellier, France), Therese Libourel (University of Montpellier, France), Anne Laurent (LIRMM, France) and Grégoire Mercier (CHU Montpellier, France)

FRIDAY (February 2, 2018)

09.00-10.30 **Session 13: Text Searching Algorithms**

- *New Variants of Pattern Matching with Constants and Variables*
Yuki Igarashi, Diptarama, Ryo Yoshinaka, and Ayumi Shinohara (Tohoku University, Sendai)
- *Duel and Sweep Algorithm for Order-Preserving Pattern Matching*
Davaajav Jargalsaikhan, Diptarama, Yohei Ueki, Ryo Yoshinaka, and Ayumi Shinohara (Tohoku University, Sendai)
- *Longest Common Prefixes with k -Mismatches & Applications*
Hayam Alamro, Lorraine A.K. Ayad, Panagiotis Charalampopoulos, Costas S. Iliopoulos, and Solon P. Pissis (King's College, London)

Session 14: Data and Model Engineering

- *Managing Data Reduction in Data Warehouses*

Franck Ravat, Jiefu Song, and Olivier Teste (IRIT, Toulouse)

- *UML2PROV: Automating Provenance Capture in Software Engineering*

Carlos Sáenz-Adán (Universidad de La Rioja), Beatriz Pérez (Universidad de La Rioja), Trung Dong Huynh (University of Southampton), Luc Moreau (King's College London)

- *Validating Data from Semantic Web Providers*

Jacques Chabin (University of Orleans), Mirian Halfeld Ferrari (University of Orleans), Beatrice Markhoff (Université François Rabelais Tours), Thanh Binh Nguyen (University of Orleans)

10.30-10.50 Break

10.50-11.00 **Awards**

11.00-12.30 **Keynote Lecture:** Yannis Manolopoulos (Aristotle Univ. of Thessaloniki)
Network Analysis on the Science of Science

12.30-12.45 **Closing/Next Sofsem** (A Min Tjoa and others)
