

Preface

This volume contains the proceedings of the 9th International Workshop on Software Engineering for Resilient Systems (SERENE 2017). SERENE 2017 took place in Geneva, Switzerland on September 4–5, 2017. The SERENE workshop is an annual event that brings together researchers and practitioners working on the various aspects of design, verification, and assessment of resilient systems. In particular it covers such areas as:

- Development of resilient systems;
- Engineering processes for resilient systems;
- Requirements engineering and re-engineering for resilience;
- Frameworks, patterns, and software architectures for resilience;
- Engineering of self-healing autonomic systems;
- Design of trustworthy and intrusion-safe systems;
- Resilience at run-time (mechanisms, reasoning, and adaptation);
- Resilience and dependability (resilience vs. robustness, dependable vs. adaptive systems);
- Verification, validation, and evaluation of resilience;
- Modelling and model-based analysis of resilience properties;
- Formal and semi-formal techniques for verification and validation;
- Experimental evaluations of resilient systems;
- Quantitative approaches to ensuring resilience;
- Resilience prediction;
- Case studies and applications;
- Empirical studies in the domain of resilient systems;
- Methodologies adopted in industrial contexts;
- Cloud computing and resilient service provisioning;
- Resilience for data-driven systems (e.g., big data-based adaption and resilience);
- Resilient cyber-physical systems and infrastructures;
- Global aspects of resilience engineering: education, training, and cooperation.

SERENE 2017 featured two invited speakers – Miroslaw Malek and Jorge Cardoso. Miroslaw Malek is the Director of the Advanced Learning and Research Institute (ALaRI), which is part of the Faculty of Informatics of the University of Lugano, Switzerland. He is a well-known expert in the areas of dependability and fault tolerance. He has carried out pioneering work in the area of dependable, parallel network design and proactive fault tolerance. Jorge Cardoso is a Chief Architect for Cloud Operations and Analytics at Huawei's German Research Center (GRC) in Munich. He is also a Professor at the University of Coimbra, Portugal. In 2013 and 2014, he was a Guest Professor at the Karlsruhe Institute of Technology (KIT) and a Fellow at the Technical University of Dresden (TU Dresden). Previously, he worked for major companies such as SAP Research (Germany) on the Internet of services and the Boeing

Company in Seattle (USA) on Enterprise Application Integration. His research interests focus on dependable and secure cloud computing and service-oriented systems.

The workshop was established by the members of the ERCIM working group SERENE. The group promotes the idea of the resilient-explicit development process. It stresses the importance of extending the traditional software engineering practice with the theories and tools supporting modelling and verification of various aspects of resilience. We would like to thank the SERENE working group for their hard work on publicizing the event and contributing to its technical program.

SERENE 2017 attracted 16 submissions, from which 11 papers were accepted. Every paper received three rigorous reviews. All submissions were of a high quality, which has allowed us to build a strong and technically enlightening program. We would like to express our gratitude to the program committee members and the additional reviewers who have actively participated in reviewing and discussing the submissions.

Since 2015 SERENE has become part of a major European dependability forum – the European Dependable Computing Conference (EDCC). We would like to thank the Organizing Committee of EDCC 2017 for their help in organizing the workshop.

July 2017

Alexander Romanovsky
Elena A. Troubitsyna

Software Engineering for Resilient Systems
9th International Workshop, SERENE 2017, Geneva,
Switzerland, September 4-5, 2017, Proceedings
Romanovsky, A.; Troubitsyna, E.A. (Eds.)
2017, XIV, 201 p. 56 illus., Softcover
ISBN: 978-3-319-65947-3