

Message from the SE'18 Workshop Chair

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The Software Engineering (SE) and Software Management (SWM) conferences, organised annually by the Gesellschaft für Informatik (GI), are proud to have hosted five workshops in 2018. Over the course of two days, emerging and persistent topics for software engineering and software engineering education were discussed in a collaborative and engaging setting. These workshops complemented the topics discussed in the main conferences and provided a forum for new ideas, preliminary results, and work-in-progress.

The workshops were selected by a committee with representatives from academia and the industry. Selection criteria included the feasibility of the proposed workshop setting, the potential to attract both authors of papers and an engaged audience, as well as the strategies to reach this potential target audience. Each of the five submitted proposals received reviews by the selection committee. All proposals were of high quality and were accepted with only minor feedback.

THE WORKSHOPS

Two workshops specifically addressed the education of future software engineers.

The *1st Workshop on Innovative Software Engineering Education (ISEE)* explored ways to systematically approach the rising number of students enrolled in programs that offer software engineering education. This is reflected in the accepted submissions that address scalability issues, e.g., by suggesting automated assessment, as well as the increasing need to deal with a heterogeneous student population. The presentations of the 12 submissions were kicked-off by a keynote by Jürgen Börstler (Blekinge Institute of Technology) and embedded in discussion sessions. A poster session for all submissions also provided the possibility for direct exchange of ideas and discussions.

The workshop on *Software Engineering for E-Learning Systems (SEELS)* addressed the particular challenges that arise from a learning environment that is more and more disconnected from the physical classroom. Learners in MOOCs or blended learning environments interact extensively with learning management systems. These systems need to provide facilities for the teacher to present the material in an engaging fashion and support the learner through progress tools and elements such as gamification while operating in a complex regulatory framework. This broad spectrum is also represented in the accepted submissions that discuss the design of specific e-learning systems as well as broader topics such as assessment. The workshop offered ample time for discussions and exchange between the participants.

The three remaining workshops addressed highly relevant topics that shape research and practice of software engineering at the moment.

The *3rd Workshop on Continuous Software Engineering (CSE)* discussed the impact of approaches to continuously deliver software on the organisations, processes, and software engineering practices. The advent of continuous deployment, DevOps, and extensive automation has changed the way organisations develop software, integrate the feedback of users, and structure their operations. The four accepted submissions by academic and industrial authors focus particularly on the use of data and tools in this environment. To ensure an interactive event, a discussant was selected for each presented paper to start the Q&A session with questions. A joint panel session concluded the workshop with a discussion of the lessons learned and future directions.

The *Workshop on Software Engineering for Applied Embedded RealTime Systems (SEERTS)* focused on the challenges in embedded systems that need to be safe, computationally and power efficient, and react to stimuli within real-time parameters. A particularly daunting environment for such systems are autonomous vehicles in which latency can be a decisive factor and strict regulatory demands must be met. Four of the six accepted submissions therefore address automotive systems specifically and discuss testing, performance, and validation in the context of existing standards. The remaining two papers addressed how open source tools can meet the challenges of multi-core optimisation and the Internet of Things.

Finally, the *5th Collaborative Workshop on Evolution and Maintenance of Long-Living Software Systems (EMLS 2018)* provided a highly interactive forum to discuss the challenges associated with systems that need to be updated and maintained over a very long period of time to meet changing requirements and operating environments. The three accepted submissions addressed this by proposing ways to realistically model the users and to use modularized simulations. In addition, experiences with modernizing a microservice architecture were reported. The entire afternoon of the full-day workshop was devoted to working groups and discussions, ensuring an interactive and engaging environment in which experts from academia and industry could discuss this important topic in depth.

It must be noted that all workshops were structured to foster discussion and exchange amongst the participants. This made the atmosphere of the workshops unique and rewarding and provided an active environment that allowed everyone to leave the role of the passive listener and to actively join the discussion and the ideation process.

ACKNOWLEDGEMENT AND THANKS

First and foremost, I would like to thank all workshop organisers for their efforts in putting together such interesting and diverse workshops. The efforts made by you to ensure an interactive and engaging program in each of the events is particularly appreciated, certainly not only by me but by all participants. Thanks are due to Horst Lichter (RWTH Aachen), Stephan Krusche (TU München), Dirk Riehle (Friedrich-Alexander-University Erlangen-Nürnberg), Andreas Steffens (RWTH Aachen), Robert Heinrich (Karlsruhe Institute of Technology), Reiner Jung (Universität Kiel), Marco Konersmann and Eric Schmieders (Universität Duisburg-Essen), Marco Kuhrmann (Clausthal University of Technology), Kurt Schneider (Leibniz Universität Hannover), Michael Striwe (paluno – The Ruhr Institute for Software Technology), Sven Strickroth and Ulrike Lucke (Universität Potsdam), Robert Höttger (Dortmund University of Applied Sciences and Arts), and Jörg Teßmer (Robert Bosch GmbH).

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A special mention needs to be made to the SE'18 General Chair Matthias Tichy (University of Ulm) and his outstanding local organisation team. They provided an excellent environment for the workshops and were extremely responsive and forthcoming during the preparation period.

Finally, a special thanks is in order for Stephan Krusche (TU München) who took the initiative to compile these workshop proceedings, coordinated the collection of material, and did the editorial heavy lifting. Thank you for this great effort, Stephan!