

Preface

These are the proceedings of the 12th International Workshop on Formal Engineering approaches to Software Components and Architectures (FESCA). The workshop was held on April 12th, 2015 in London (UK) as a satellite event to the European Joint Conference on Theory and Practice of Software (ETAPS'15).

The aim of the FESCA workshop is to bring together junior researchers from formal methods, software engineering, and industry interested in the development and application of formal modelling approaches as well as associated analysis and reasoning techniques with practical benefits for software engineering.

In recent years, the growing importance of functional correctness and the increased relevance of system quality properties in terms of performance, reliability, and security have stimulated the emergence of analytical and modelling techniques for the design and development of software systems. With the increasing complexity of today's software systems, FESCA aims at addressing two research questions: (1) what role software architecture can play in systematic addressing of the analytical and modelling challenges, and (2) how formal and semi-formal techniques can be applied effectively to make the issues easier to address automatically, with lower human intervention. The workshop is interested in both the development and application of formal methods in component-based development and tries to cross-fertilize their research and application.

The previous FESCA workshops at ETAPS 2004 to 2014 enjoyed high-quality submissions and attracted a number of recognized guest speakers, including Raffaella Mirandola (Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy), Rolf Hennicker (Ludwig-Maximilians-Universität, München, Germany), Constance L. Heitmeyer (Naval Research Laboratory, USA), Manfred Broy, (Technische Universität München, Germany), František Plášil (Charles University, Czech Republic), Martin Wirsing (Ludwig-Maximilians-Universität, München, Germany), Ivana Černá (Masaryk University, Czech Republic), Samuel Kounev (Karlsruher Institut für Technologie, Germany), Vittorio Cortellessa (Department of Computer Science and Engineering, and Mathematics University of L'Aquila, Italy), and Colin Atkinson (University of Mannheim, Germany).

The program committee of FESCA'15 consisted of

- Přemysl Brada (University of West Bohemia in Pilsen, Czech Republic)
- Ivana Černá (Masaryk University, Czech Republic)
- Yanja Dajsuren (Eindhoven University of Technology, Netherlands)
- Antinisa Di Marco (Università dell'Aquila, Italy)
- Petr Hnětynka (Charles University in Prague, Czech Republic)
- Samuel Kounev (University of Würzburg, Germany)
- Markus Lumpe (Swinburne University of Technology, Australia)
- Daniel Menasche (UFRJ, Brazil)

- Diego Perez Palacin (Politecnico di Milano, Italy)
- Dorina Petriu (Carleton University, USA)
- Nadia Polikarpova (Massachusetts Institute of Technology, USA)
- Ralf Reussner (Karlsruhe Institute of Technology, Germany)
- Cristina Seceleanu (Mälardalen University, Sweden)
- Catia Trubiani (Gran Sasso Science Institute, Italy)
- Steffen Zschaler (King's College London, UK)

The papers were refereed by the program committee and by several outside referees, whose help is gratefully acknowledged.

For the twelfth time, FESCA has been organized as a satellite event of ETAPS. We are very grateful to the ETAPS organizers for taking care of all the local organization and for accommodating all our special requests.

Prague, January 29, 2015

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