

2nd FME Workshop on Formal Methods in Software Engineering (FormaliSE 2014)

Proceedings

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Message from the Chairs

Welcome to the 2nd *FME Workshop on Formal Methods in Software Engineering* (FormaliSE 2014), Hyderabad, India, 3 June 2014, co-located with ICSE 2014.

The software industry has a long-standing and well-earned reputation for failing to deliver on its promises and it is clear that still nowadays, the success of software projects with the current technologies cannot be assured. For large complex projects ad hoc approaches have proven inadequate to assure the correct behavior of the delivered software. The lack of formalization in key places makes software engineering overly sensitive to the weaknesses that are inevitable in the complex activities behind software creation. Aids to precision in each phase of software development and crosschecking are essential, and this is precisely one the objectives of formal methods.

"Formal methods" are intended to provide the means for greater precision in both thinking and documenting the preliminary stage of the software creation process. When done well, this can aid all aspects of software creation: user requirement formulation, implementation, verification/testing, and the creation of documentation.

However, the maturing of formal techniques into real-life software engineering involves providing notations and tools that are readily understood and used by practitioners, and the integration of such tools with activities that are far from the unrealistic assumptions that characterized some earlier research in formal methods.

After decades of research, and despite significant advancement, formal methods are still not widely used in industrial software development. This may be due to the fact that the formal methods community has not enough focused its attention to software engineering needs, and kits specific role in the software process. At the same time, from a software engineering perspective, there could be a number of fundamental principles that might help to guide the design of formal methods in order to make them more easily applicable in the development of software applications.

The main goal of this workshop is to foster integration between the formal methods and the software engineering communities with the purpose to examine the link between the two more carefully than is currently the case.

Making progress in the industry usability of formal methods requires bringing formalists together with software engineers from a wide range of backgrounds. Although specialist symposia in formal techniques and verification are thriving, their mono-disciplinary means that formalists are not challenged enough by the realities of software development, and that software developers are not aware of the potential benefits of integrating formal techniques and tools into existing practice.

This need to achieve dialogue between the fairly small formal methods community and the (much larger) community of software scientists and practitioners forms the principal motivation holding for our workshop, and for our desire to hold it at ICSE.

We have received 21 paper submissions coming from 13 different countries around the world. After being reviewed by at least 3 members of the program committee, 9 of them have been accepted giving an acceptance rate of 43%.

In addition to the paper presentations, the workshop program includes a keynote speaker. We are grateful to Aditya Nori, senior researcher at Microsoft Research for accepting our invitation to address the workshop with a talk on “Software Reliability via Machine Learning”.

The program has been organized dividing the presentation of the accepted papers in four sections, the first one including the keynote. At the end of the workshop a session has been organized with the purpose of stimulating a discussion on the workshop’s main themes.

We would like to thank the Program Committee members for their help in selecting the papers. We also would like to thank the members of the ICSE Workshop Organizing Committee. Particular thanks go to the Workshops Chairs [Nenad Medvidović](#) (University of Southern California, USA) and Sriram Rajamani (Microsoft Research, India).

Enjoy the workshop!

Stefania Gnesi and Nico Plat

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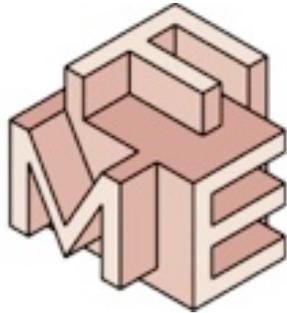
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