

Foreword

On behalf of the entire organizing team of ESEC/FSE 2015 it is a great honor and pleasure for us to welcome you to the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering held August 30-September 4, 2015 in Bergamo, Italy.

The conference brings together researchers, practitioners, and educators in software engineering to discuss the most recent innovations and challenges in the area. This year's program continues the great tradition of previous ESEC/FSE joint meetings in being as exciting as it is diverse.

The research track attracted a record 291 submissions from all over the world. Reviewing was performed by a program committee consisting of 37 of the world's top software engineering experts from academia and industry, and followed a two-phase single-blind process. During the first phase, each paper received two reviews. Then, the 163 papers that made it to the second phase received a third review. After careful reviewing and extensive online discussion, a physical PC meeting was held in Florence on May 23-24, right after ICSE. The committee eventually accepted 74 papers covering a large variety of software engineering topics: from empirical studies, program analysis and testing to models, development techniques, adaptive systems, search-based software engineering, security and others.

Pursuing the tradition of its predecessors, this year's ESEC/FSE encouraged authors of accepted papers to submit data sets and any additional material needed to replicate their experiments and work. We call this material Replication Packages while in previous editions and other conferences these are called Artifacts. Our rationale for changing the name has been to stress the importance of this material to support replication of work by other researchers. In this edition of the conference, papers associated to accepted replication packages benefit from five more minutes of presentation at the conference, an extra page dedicated to the presentation of the replication package in the conference proceedings, and the replication package itself stored on the ACM digital library.

This year, the authors of 25 accepted ESEC/FSE papers submitted a replication package for review. A formal evaluation of these submissions was carried out by a program committee composed of 14 members plus 2 co-chairs, representing an overall of 13 institutions and 9 countries. The selection process was carried under tight time constraints: 50 reviews were written in three weeks. The replication package committee carefully evaluated each package using criteria such as consistency with respect to the accepted paper, completeness, ease of reuse, quality of documentation, and potential to facilitate further research. Each package received two reviews. An online discussion phase was held by the program committee to agree on the final recommendation for each replication package. As a result of this evaluation process, 17 out of the 25 submissions were accepted.

Besides the research track, the conference offers: an industry track with three sessions where 9 papers, selected out of 21 submissions, are presented and lively discussion is solicited; a new

ideas track with 14 papers selected out of 54 submissions; a tool demo track with 13 demos selected out of 30 submissions; 11 candidates for the student research competition; a doctoral symposium (held before the conference) in which 5 research proposals will be discussed.

Moreover, the conference hosts two keynotes:

The Role of Science for the Conservation and Preservation of Cultural Heritage and in Fighting Art Crimes by Maurizio Seracini, director of the Center for Interdisciplinary Science for Art, Architecture, and Archaeology (CISA3) at the University of California San Diego and Visiting Professor at Monash University, Melbourne

Software without Boundaries: engineering secure invisible software by Bashar Nuseibeh, Professor of Computing at The Open University and a Professor of Software Engineering at Lero - The Irish Software Research Centre

Also, it hosts two specially invited talks, each from the recipients of the 2015 SIGSOFT Awards. These are:

Formal methods and continuous change: towards a happy marriage by Carlo Ghezzi, Chair of Software Engineering at Politecnico di Milano (ACM SIGSOFT Outstanding Research Award Talk)

James A. Jones, Mary Jean Harrold, John Stasko, Visualization of Test Information to Assist Fault Localization, Proceedings of the 24th International Conference on Software Engineering (ICSE '02) (ACM SIGSOFT Impact Paper Award Talk)

ESEC/FSE 2015 is also supporting the Journal First Initiative by the ACM Transactions On Software Engineering and Methodology (TOSEM) and the IEEE Transactions on Software Engineering (TSE). With this initiative, selected journal papers that are not extensions of conference papers are presented at one of the leading conferences in the area. This allows attendees to hear talks about excellent research work from world-leading journals that has only previously appeared in a journal and would, therefore, otherwise go unrepresented at any conference. The editorial boards of TOSEM and TSE, in co-operation with the ESEC/FSE program co-chairs, selected four recently accepted journal-first papers, two from each journal, to be presented at the conference. These papers are the following:

Mkaouer, Wiem; Bechikh, Slim; Deb, Kalyanmoy; Ouni, Ali; Many-Objective Software Remodularization using NSGA-III; ACM TOSEM Issue 24(3)2015.

Di Alesio, Stefano; Nejati, Shiva; Briand, Lionel; Gotlieb, Arnaud Combining Genetic Algorithms and Constraint Programming to Support Stress Testing of Task Deadlines; ACM TOSEM Issue 25(1)2016.

Krall, J.; Menzies, T.; Davies, M.; GALE: Geometric Active Learning for Search-Based Software Engineering; To appear (available online at the time of writing).

Ampatzoglou, A.; Chatzigeorgiou, A.; Charalampidou, S.; Avgeriou, P., The Effect of GoF Design Patterns on Stability: A Case Study; To appear (available online at the time of writing).

Besides the traditional doctoral symposium, the pre-conference activities include six tutorials on recent advances on software engineering and six workshops on a set of important topics:

automating test case design, selection and evaluation (A-TEST), software evolution (IWPSE), software development for mobile applications (DeMobile), control theory for software engineering (CTSE), social software engineering (SSE) and quality-aware DevOps (QUDOS). After the conference, the annual symposium dedicated to Search-Based Software Engineering (SSBSE) is held.

Many people made this great event possible, so we apologize in advance if we do not mention everyone by name. We are extremely thankful to the Organizing Committee who worked hard at the development of all parts of the conference. We extend a special thank to the Program Committee members of all tracks and in particular to those of the research track, who worked extremely hard to review the many submissions, discussed them extensively online, and participated to the physical PC meeting. We would like to thank Antonia Bertolino, the ICSE 2015 General Chair, for her assistance with arrangements for the PC meeting. We would also like to thank Alex Orso, Andreas Zeller and Darko Marinov for the software that produces slides and other materials for the PC meeting, Yue Jia for extending this to include multi-objective discussion order optimisation and offline backup facilities, and Gilles Perrouin, Quentin Boucher and Nicolas Genon who have been involved in the preparation of the PC meeting and of the conference program.

We would like to acknowledge ACM for the sponsorship of ESEC/FSE 2015 through its Special Interest Group on Software Engineering (SIGSOFT) and Farrah Khan, for her help in managing all contractual aspects related to the conference. We also deeply thank our supporters ABB, Microsoft Research, Fujitsu, CEFRIEL, Google, BTO, ITA-STQB and Engineering. With this sponsorship, financial support, and many contributions from members of the software engineering community, we are happy to present to you an exciting and rich program with ideas that we are sure will have great impact and will foster progress in software engineering worldwide.

Finally, we want to thank all of the conference attendees for contributing to making ESEC/FSE 2015 a success. We hope that you will find the program interesting, thought-provoking, and inspiring, and that the conference will give you valuable opportunities to share ideas with researchers and practitioners from the vibrant software engineering community.

Elisabetta Di Nitto, Conference Chair

Mark Harman and Patrick Heymans, Program Co-Chairs