Message from the Chairs

It is our great pleasure and honor to welcome everyone to the 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017). The ASE conference series is the premier research forum for automated software engineering. Each year it brings together researchers and practitioners from academia and industry to discuss foundations, techniques, and tools for automated analysis, design, implementation, testing, and maintenance of software systems.

This publication contains the proceedings of the conference, which was held between October 29 and November 3, 2017 in Urbana Champaign, IL, USA. The first two days (October 29 and 30) and the last day (November 3) were allocated to workshops, tutorials, and doctoral symposium. The main conference was held from October 31 to November 2, and featured keynotes, technical, experience, new idea, journal first, and demo papers.

The conference technical program features the latest development in the area of automated software engineering, including (and not limited to) research on mobile development and testing, automated program synthesis and repair, verification & validation, program analysis, and security. Overall, the purpose of ASE research is to support developers with automated solutions for the construction and evolution of modern software systems.

ASE 2017 was held on the campus of the University of Illinois at Urbana Champaign (UIUC), USA. Since its founding in 1867, UIUC has earned a reputation as a world-class leader in research, teaching, and public engagement. UIUC hosts the National Center for Supercomputing Applications (NCSA) and is home to the fastest supercomputer on a university campus. The University comprises 17 colleges and holds 651 buildings on 2,578ha and its annual operating budget in 2016 was over $2 billion. UIUC also operates a Research Park home to innovation centers for multinational corporations and publicly traded firms including Abbott, Caterpillar, Capital One, State Farm, and Yahoo, among others.

As a major highlight, ASE 2017 attracted three internationally renowned keynote speakers, whose talks feature a quite diverse set of topics. Specifically:

- Gerard Holzmann (Nimble Research): “Cobra - an Interactive Static Code Analyzer”
- Jiawei Han (University of Illinois at Urbana-Champaign): “Mining Structures from Massive Text Data: Will It Help Software Engineering?”

For the technical research track, we received a number of 388 submissions, the highest number of submissions ever for ASE! Of these, 21 have been desk-rejected, while 367 entered the reviewing process (314 technical papers, 8 experience papers, and 45 new ideas papers). Each paper received
at least three reviews, of which at least two from program committee members and one from members of the Expert Reviewing Panel (ERP).

For the second time, ASE adopted a lightweight double-blind reviewing process, in which manuscripts were submitted as double-blind, and authors’ identities were revealed to reviewers after reviews were uploaded on the submission system. We would like to thank our reviewing process chairs, Gabriele Bavota and Hoan Nguyen, for helping us in checking the double-blind compliance and the correct formatting of all submissions. We had a very intense online discussion phase after reviews were uploaded, in which all reviewers had the opportunity to carefully elaborate on points in favor and against of each paper. Then, on July 8 and 9 2017, the Program Committee Members met in Santa Barbara to discuss a subset of the submissions (131 in total) that passed the first phase. We would like to thank Tevfik Bultan, ISSTA 2017 general chair, for generously hosting us at the University of California in Santa Barbara and helping us in the organization of the program committee meeting!

As the outcome of the meeting, we accepted 88 contributions (overall acceptance rate of 24%):

- 65 technical papers (21% acceptance rate);
- 2 experience papers (25% acceptance rate);
- 10 new idea papers (22% acceptance rate);
- In addition 11 technical papers reclassified as new idea papers, of which 9 accepted to be included in the proceedings.

Some of the above contributions were conditionally accepted (including all reclassified papers), and therefore checked again by the program committee or ERP members before the final acceptance. This is the first time ASE PC chairs and members enforce such checking to ensure the high quality of ASE publications.

We could not conclude the description of the reviewing process without giving a BIG THANK to all program committee members (photo below) and ERP members, as well as to additional reviewers (listed in the proceedings). With such a very large number of submissions, they had to carry out an enormous amount of work in a very short time (about five weeks).

For the first time this year, ASE will feature six presentations of journal-first papers. Such papers have been identified among papers published since January 2016 in the Automated Software Engineering Journal (ASEJ) edited by Springer. Out of 13 papers that qualified as journal first (i.e., they were not extension of previous conference papers) six accepted the invitation. The presentation of these papers has been allocated in sessions also featuring the other technical contributions mentioned above. We would like to thank Robert Hall, ASEJ Editor-In-Chief, for his kind support in this new initiative.

Besides presentations of technical papers, the program of ASE 2017 also includes formal presentations of 20 demo papers, as well as hands-on demonstrations of the related tools. These papers were selected from 32 submissions. We would like to thank the tool demonstration chairs David Lo and Alexander Pretschner.
ASE 2017 also featured four workshops, two of which held before the main conference and two after the main conference:

- **International Workshop on Intelligent Software Engineering 2017 (WISE 2017).** Organizers: Tao Xie, Abhik Roychoudhury, Wolfram Schulte, and Qianxiang Wang
- **6th International Workshop on Software Mining (SOFTWAREMINING 2017).** Organizers: Ming Li, Xiaoyin Wang, and David Lo
- **Java Pathfinder Workshop 2017 (JPF 2017).** Organizers: Nastaran Shafiei and Darko Marinov
- **Towards A National Java Resource (NJR).** Organizers: Cristina Lopes and Jens Palsberg

We would like to thank the workshop chairs Antonio Filieri and Corina Pasareanu, as well as all the workshop organizers and authors.

ASE 2017 also offered four tutorials on topics such as theorem proving, probabilistic programing, large-scale program analysis, and network verification:

- **Theorem Proving With Vampire For Rigorous Systems Engineering.** Presenters: Laura Kovács, Giles Reger, Martin Suda, and Andrei Voronkov.
- **Probabilistic Programming and Analysis for Software Engineers.** Presenters: Sasa Misailovic, Antonio Filieri.
- **Program Analysis on Thousands of Projects.** Presenters: Ganesha Upadhaya, Hridesh Rajan, Robert Dyer, and Tien N. Nguyen.
- **Network Verification from Algorithms to Deployment.** Presenters: P. Brighten Godfrey, and Santhosh Prabhu

We would like to thank the tutorial chairs Nikolaj Bjørner and Milos Gligoric for selecting the tutorials, as well as the tutorial presenters and their attendees.
Furthermore, as per ASE tradition, the pre-conference featured a doctoral symposium organized by Gordon Fraser and Christian Kästner. The symposium was opened by a keynote speech by Claire Le Goues (Carnegie-Mellon University, USA). Then, eight doctoral students presented their ongoing work and benefited from the advice given by the panelists.

Numerous organizing committee members have helped in various ways to make the event a success. In particular, we would like to thank:

- The Sponsorship Chair Michael Whalen. ASE 2017 received generous contributions from many cooperating organizations, which helped to keep the registration rates low;
- The Social Media chairs Jeff Huang and Na Meng for proactively advertising the conference on Twitter and Facebook;
- The Local Arrangements Chair Tao Xie;
- The Finance Chair / Treasurer Darko Marinov;
- The Proceedings Chair Sasa Misailovic for interacting with the proceedings production company and for his help with putting together these proceedings;
- The Web Chairs Felicia Chandra and Wei Yang for keeping the ASE 2017 website always up-to-date;
- The Conference Organization Chairs Donna Coleman and Lisa Yanello;
- The Student Volunteer Chairs Mark Hills and Owolabi Legunsen, as well as to all student volunteers.

Last but not least, we would like to thank our sponsors – please refer to the conference website (http://ase2017.org/sponsors) for a full list – for providing various kinds of support.

Grigore Rosu, ASE 2017 General Chair

Massimiliano Di Penta and Tien N. Nguyen, ASE 2017 Program Co-Chairs