Message from the Program Chairs of ICSE 2018

Warmest greetings from the Technical Track chairs! The ICSE Technical track is the premier forum for researchers and practitioners to present and discuss the most recent innovations, trends, outcomes, experiences, and challenges in the field of software engineering.

This year, our primary challenge was the introduction of Double-Blind Reviewing (DBR); a new initiative for ICSE. In the Technical Paper Track, DBR was applied "heavily", i.e., author identities were not revealed to the program committee nor to members of the program board until the announcement of the accepted papers. Author identities for rejected papers were never revealed, allowing the on-going revision and review process to remain double-blind, should chairs of other conferences wish it to be so.

The broader aim of the overall initiative to move to double-blind reviewing was to increase fairness and transparency of the review process, both actual and perceived. The chairs were motivated by the considerable body of scientific evidence that has developed concerning the phenomenon of implicit bias. While biases differ from individual to individual, they are, nevertheless, possessed by all humans and we have little control over them; being implicit, the biases remain unconscious and largely unknowable. We wanted ICSE to be diverse and inclusive, which we believe to be important for the development of the underlying science, just as much as it is for fairness and the maximization of "correctness" of the outcome of the paper review process.

In future years, ICSE may experiment with different models of the implementation details of double-blind reviewing. For the 2018 iteration, we wanted to start out with the most all-enveloping process that maximally removes author identity from the consideration as a useful (upper bound) starting point. While it is impossible to completely remove author identity in all cases, we asked referees to take reasonable steps to avoid becoming certain of author identity while simultaneously requesting that authors also take reasonable steps to help us in this goal. Thus, we sought to create a process where it was possible, and, in fact, desired, to review papers without consideration of author identity. Our observation was that by using this "heavy" DBR process, we did not encounter any fundamentally unresolvable problems or any irreconcilable constraints. We did, however, miss an ability to request an expert review from outside of our program committee and program board, for some interdisciplinary papers. We also missed being able to take into account historical reviewing information from previous submissions to other venues, unless they were also heavily double-blind, but we believe that the impact of this constraint will lessen in the future as more conferences adopt ("heavy") DBR.

Overall, the Technical Paper Track received 502 submissions from 1,493 authors and 52 countries. To select papers from among these submissions, we used a Program Board (PB) model (first introduced to ICSE in 2014), with 33 members in the PB and 100 members in the Program committee (PC). During the week of September 4, 2017, with the help of the PB, and scripts kindly made available by Robert Feldt for this purpose (thank you so much, Robert!!), we reviewed all submissions for violations of DBR guidelines and format constraints, and desk-rejected 13 of them. In the eight weeks that followed, members of the PC reviewed all remaining submissions, facilitated by PB members who read all the reviews and suggested improvements. Our aim was to be consistent and to maximize the quality of the review process. The overall number of reviews written was 1,487, with each paper receiving at least three reviews (additional reviews from the PC were solicited where we felt that we needed extra expertise).

We encouraged the authors to engage in the rebuttal process with the reviewers (this practice was introduced in earlier editions of ICSE), in order to improve our confidence in the relevance of the reviews and to reduce a chance that important aspects were missed or incorrectly interpreted. In order to maximize the value of the rebuttal phase to the authors, we ensured that all reviews on the paper were presented to the authors before the rebuttal phase started, and that no additional reviews were solicited on any paper after the conclusion of the rebuttal phase.

The reviews and the rebuttals were then discussed (in great detail) by the PC and the PB, who exchanged more than 5,000 comments/emails over a two-week period of intense online discussion. As the result of the discussion, 71 papers were accepted by the PC members and 327 were rejected. The remaining 74 papers for which the PC members were unable to reach a consensus were discussed at an in-person PB meeting, which took place in London on December 6-7, 2017 (see the picture below).

This discussion led to 34 additional acceptances, yielding an overall total of 105 accepted papers (an acceptance rate of 21%). The PB members overseeing the discussions also wrote a summary of the decisions which the authors received as feedback, together with their reviews. Based on the reviews and recommendations of PC and PB members, we selected 8 papers to receive an ACM SIGSOFT Distinguished Paper Award.

PB Members of ICSE 2018.

Following the practice which started at ICSE 2017, we invited the authors of 297 submissions that did not make the final selection for the Technical Track, but received positive reviews, to present their work in the form of a poster during the conference. Several other tracks did the same.

In addition to the 105 papers selected as part of the above process, the ICSE 2018 Technical Program is augmented and enriched by 47 journal-first papers, selected by a special committee from papers published in 2017 in IEEE Transactions on Software Engineering, ACM Transactions on Software Engineering and Methodology, and Journal of Empirical Software Engineering. In forming the program, we merged the papers from these two lists based on their thematic similarity.

We would like to thank the ICSE 2018 Program Board and the Program Committee for the huge amount of work and dedication they put into reviewing. Their efforts not only resulted in the selection of papers that you see in these proceedings, but also provided valuable feedback to authors of all submitted papers. We also thank our amazing Data Chair, Tom Zimmermann, and, of course, our tireless leader, the ICSE 2018 General Chair Ivica Crnkovic, for his commitment to making ICSE 2018 the best it can be. And we join Ivica in giving our gratitude to the many people who were instrumental in making it so.

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