

# Message from the ICSE 2023 Program Co-Chairs

Welcome to ICSE 2023! It is our great pleasure to introduce the program of the 45th IEEE/ACM International Conference on Software Engineering (ICSE 2023), which will be held in Melbourne, Australia, on May 14-20, 2023.

This year, the technical track received 797 papers, of which 780 entered the reviewing process, and 208 (26.6% acceptance rate) were ultimately accepted, 34 of which after a gatekeeping phase, one was withdrawn after acceptance, making a total of 207 papers in the program.

In the following, we would like to provide some information about the reviewing process.

**The role of area chairs and PC members.** Since 2021, the ICSE reviewing process has leveraged the help of area chairs. The role of area chairs is to make sure that submissions belonging to a given research area are treated along consistent criteria and standards common to that area. Considering the increasing volume of submissions for some areas, this year we involved ten area chairs: David Lo, Denys Poshyvanyk, Myra Cohen, Corina S. Pasareanu, Abhik Roychoudhury, Walid Maalej, Margaret-Anne Storey, Andrian Marcus, Bram Adams, and Kelly Blincoe.

Area chairs have provided manyfold and significant support to the whole reviewing process. First, they helped us to assign papers to reviewers, and to identify out-of-scope submissions. Then, they supervised the reviewing process for all papers assigned to them, identifying the need for additional expertise, moderating the discussions, and encouraging the convergence toward a decision. Importantly, as also happened for ICSE 2022, there was no single paper on which program co-chairs had to suggest a recommendation because no consensus had been reached. This is particularly important because it means that the decision was always taken without having knowledge about the paper's authorship (known to program chairs only). Overall, each area chair had a workload comparable to those of program co-chairs of medium-sized conferences. They all did a terrific job, and we are extremely grateful to them!

The ICSE 2023 program committee was composed of 194 PC members, with a wide diversity in terms of expertise, geographic distribution, and gender. They did an incredible job in providing timely and constructive reviews in a relatively tight period of time (about 6 weeks), and in participating in the online discussion. Overall, PC members have written a total of 2,347 reviews and posted 10,083 comments.

Among the PC members, based on the inputs from area chairs and other co-reviewers, we recognize the following 23 as distinguished reviewers: Amjed Tahir, Andreas Vogelsang, Andrzej Wasowski, Aurdris Mockus, Bogdan Vasilescu, Brittany Johnson, Caitlin Sadowski, Christine Julien, Diomidis Spinellis, Igor Steinmacher, Jennifer Horkoff, Julia Lawall, Kevin Moran, Klas Tantithamthavorn, Klas Stool, Leandro Minku, Leonardo Mariani, Marcel Boehme, Philipp Leitner, Rachel Tzoref-Brill, Sebastian Baltes, Sebastian Proksch, and Xavier Franch.

**Reviewing process.** After a first scrutiny from us program co-chairs (to check compliance with the format, anonymization, and scope), after a plagiarism analysis, and after a further scope check from the area chairs when needed, each manuscript received at least three reviews. After a first

preliminary discussion (which sometimes led to the addition of additional reviews), the authors of all papers had six days to read the reviews and provide a response to the reviewers. Reviews were then thoroughly discussed, taking into account the authors' responses, where a response was provided. For a small subset of papers, where further questions emerged during the discussion or further reviews were required, a second response period was then opened.

After a consensus was reached, for each paper, one of the reviewers was also asked to write a metareview, explaining the reasons for acceptance or rejection, also in relation to what has been discussed behind the scenes. Some papers (35) were asked to undergo a gatekeeping process after the notification, i.e., a revised version was re-reviewed by a shepherd. Of those, 34 were accepted.

**Reviewing guidelines.** Following what was done in the previous ICSE, we provided PC members (as well as authors) with a detailed set of guidelines, with the aim of improving the consistency in the provided reviews, setting reviewing criteria along different dimensions (technical soundness, novelty, significance, verifiability and transparency, and presentation), and avoiding, wherever possible, known antipatterns. We are so grateful to the authors of the initial sets of guidelines (Amy Ko and Jan Vahrenhold program co-chairs of ICER 2021, Andreas Zeller and Daniela Damian program co-chairs of ICSE 2022) which we have evolved and adapted to our own reviewing process. We hope that this initiative continues over future ICSE conferences (it is already happening, at the time of this writing, for ICSE 2024).

**Open access policy and artifacts check.** Continuing the tradition of previous ICSE conferences, we adopted the open-access policy. Specifically, each submitted manuscript was supposed to provide the availability of data (and/or other artifacts aimed at supporting the research reproducibility). Where this was not possible, the authors were expected to explain the reasons. For the first time, this year, we asked one of the reviewers of each paper to scrutinize the provided artifacts and check whether they are in line with what was declared at submission time. In our opinion, this helped to encourage the submission of complete artifacts, and are happy that forthcoming conferences are also adopting this initiative.

**Distinguished papers.** It is a tradition of SIGSOFT-sponsored conferences to award less than 10% of the accepted papers with a Distinguished Paper Award. This year, we have selected 10 outstanding papers:

1. Do I Belong? Modeling Sense of Virtual Community Among Linux Kernel Contributors. *Bianca Trinkenreich, Klaas-Jan Stol, Anita Sarma, Daniel M German, Marco Gerosa, and Igor Steinmacher*
2. Compatible Remediation on Vulnerabilities from Third-Party Libraries for Java Projects. *Lyuye Zhang, Chengwei Liu, Zhengzi Xu, Sen Chen, Lingling Fan, Lida Zhao, Jiahui Wu, and Yang Liu*
3. A Qualitative Study on the Implementation Design Decisions of Developers. *Jenny T. Liang, Maryam Arab, Minhyuk Ko, Amy J. Ko, and Thomas D. LaToza*
4. STILL AROUND’’: Experiences and Survival Strategies of Veteran Women Software Developers. *Sterre van Breukelen, Ann Barcomb, Sebastian Baltes, and Alexander Serebrenik*
5. Understanding and Detecting On-the-Fly Configuration Bugs. *Teng Wang, Zhouyang Jia,*

- Shanshan Li, Si Zheng, Yue Yu, Erci Xu, Shaoliang Peng, and Xiangke Liao*
6. Testing Database Engines via Query Plan Guidance. *Jinsheng Ba and Manuel Rigger*
  7. Sibyl: Improving Software Engineering Tools with SMT Selection. Will Leeson, *Matthew B Dwyer, and Antonio Filieri*
  8. Lejacon: A Lightweight and Efficient Approach to Java Confidential Computing on SGX. *Xinyuan Miao, Ziyi Lin, Shaojun Wang, Lei Yu, Sanhong Li, Zihan Wang, Pengbo Nie, Yuting Chen, Beijun Shen, and He Jiang*
  9. Efficiency Matters: Speeding Up Automated Testing with GUI Rendering Inference. *Sidong Feng, Mulong Xie, and Chunyang Chen*
  10. Rete: Learning Namespace Representation for Program Repair. *Nikhil Parasaram, Earl Barr, and Sergey Mehtaev*

We would like to congratulate the authors of these papers for this big achievement!

**Keynotes.** We are proud to host three great keynote speakers, who will provide their insights on timely and inspirational topics:

1. Prof. Sarah Pink from Monash University will provide her view on “Future Software for Life in Trusted Futures.”
2. Dr. Liming Zhu from CSIRO's Data61 will talk about “Software Engineering as the Linchpin of Responsible AI.”
3. Prof. Paolo Tonella from the Università della Svizzera italiana will provide insights about “The Road Toward Dependable AI Based Systems.”

We are confident that these keynotes will be a great source of inspiration for all the ICSE 2023 attendees.

**The composition of ICSE 2023 paper sessions.** The ICSE 2023 technical track papers are only one component of the conference sessions. Following the tradition of past ICSE conferences, ICSE 2023 sessions are composed of contributions from other different tracks: Software Engineering in Practice (SEIP, 46 papers accepted), Software Engineering Education and Training (SEET, 32 papers accepted), Software Engineering in Society (SEIS, 20 papers accepted), New Ideas and Emerging Results (NIER, 25 papers accepted), and Demonstrations. Moreover, we feature 90 presentations (Journal-First Track) of papers published in three software Engineering Journals (IEEE Transactions on Software Engineering, ACM Transactions on Software Engineering and Methodology, and Empirical Software Engineering). Finally, for the first time, ICSE features a showcase of 12 best papers from various conferences related to requirement engineering (RE), software architectures (ICSA), model-driven development (MODELS), and formal methods (FM). Overall, we are talking about an impressive set of 469 contributions!

Besides the paper sessions and the keynotes, the main program of the conference includes:

- A talk from the authors of the ICSE 2013 paper that was judged to be the Most Influential Paper (MIP) after ten years. The awarded paper is “*SemFix: program repair via semantic analysis*” by Hoang Duong, Thien Nguyen, Dawei Qi, Abhik Roychoudhury, and Satish Chandra;
- The ACM SIGSOFT Outstanding Research Award (Gail Murphy, University of British

Columbia, Canada), and the Harlan D Mills Award recipient (David Harel, Weizmann Institute of Science, Israel) talk

- An Industry Forum, composed of two sessions featuring talks from practitioners;
- Three sessions about the Future of Software Engineering featuring talks from worldwide leaders on how they see the landscape of software engineering is going to change in future years;
- A panel on the early phases of software engineering;
- 7 Technical briefings;
- The ACM Student Research Competition;
- The Student Contest on Software Engineering (SCORE); and
- Poster presentations of contributions submitted to the Poster Track, as well as papers accepted in all other tracks.

**Notes of gratitude.** We would like to thank John Grundy, the ICSE 2023 general chair, for his great leadership and support. Moreover, we would like to thank Daniela Damian and Andreas Zeller, the ICSE 2022 program co-chairs, for the precious suggestions provided to us after running a successful conference last year. Above all, we would like to thank over 2,500 authors for submitting their manuscripts to ICSE 2023. We hope that the authors of accepted papers will help us to make ICSE 2023 a great, engaging, and inspirational event. As usually happens, not all authors received good news from us; however, we hope that their “not yet accepted” papers will benefit from the received feedback and become even better papers. Last, but not least, we would like to thank all attendees of ICSE 2023. We look forward to meeting all of you at the conference and hope you will find the program interesting and inspirational. For sure we will!



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