Software today is larger and more complex than ever before. It is hardly surprising that debugging and repair are becoming more difficult and costly. On the other hand, this provides golden opportunities for researchers to explore how to tackle real-world problems. While manual debugging is impractical for large software, automatic fault-localization techniques have not matured to the desired level of accuracy, consistency, and usability. Developers face many obstacles in debugging and repair, such as uncertainties in the suspiciousness of program entities in the presence of multiple faults, difficulties in reliably recording and replaying failed executions, and bug fixes that may introduce even more faults. Furthermore, many existing approaches suffer from critical shortcomings that limit their applicability, including the complexity and unscaleability of formal verification, the imprecision of static analysis, the low performance of dynamic techniques, and the high setup and operating costs of human-centric debugging environments. It is very common that researchers rely on simplified models that do not accurately reflect the complexity in large-scale industrial software. Practitioners question whether research proposals and results can actually benefit their work.

The IEEE IDEAR Workshop has extended the highly successful IEEE International Workshop on Program Debugging (IWPD) to include the program repair aspects, which are of major importance to modern software development such as in continuous integration. The goal of the IDEAR Workshop is to highlight the most pressing challenges and innovative solutions associated with program debugging and repair, especially with respect to software business, methodologies, techniques, environments, and human factors. Industry experience reports and empirical studies are also welcome. We aim to bring together researchers and practitioners to discuss the latest advancements and identify further challenges that must be overcome.

Topics of Interest

The workshop welcomes submissions that cover, but are not limited to, the following topics:
- Integrating debugging and repair with other software development and maintenance activities
- Social aspects of program debugging and repair
- Software risk analysis and cost estimation for fault localization, program repair, and related social interactions
- Transitioning from research to practice
- Pedagogical models for effective teaching of debugging and repair
- Debugging and repair in cloud computing environments
- Security aspects of program debugging and repair
- Empirical studies, experience reports and industrial best practices
- Impacts of software business, human factors, programming languages, and tool environments on program debugging and repair
- How program debugging and repair is changing with cloud computing and virtualization
- Novel repair methods for specific application domains (e.g., safety critical systems, embedded software, etc.)
- Development of new tools for debugging and repair
- Social aspects of program debugging and repair
- Models for effective teaching of debugging and repair
- Debugging and repair in cloud computing environments
- Security aspects of program debugging and repair
- Empirical studies, experience reports and industrial best practices
- Impacts of software business, human factors, programming languages, and tool environments on program debugging and repair

Important Dates

- July 21, 2018: Submission deadline
- August 5, 2018: Notification to authors
- August 20, 2018: Camera-ready copies
- October 15, 2018: IDEAR Workshop

Submissions

Submit original papers (not published or submitted elsewhere) with a maximum of 8 pages. Include the paper title, the name and affiliation of each author, a 150-word abstract, and up to 6 keywords. Both research papers and industry experience reports are welcome. All submissions must be written in English, following the IEEE conference proceedings format, and uploaded through the workshop submission site at https://easychair.org/conferences/?conf=idear18. Each submission will be reviewed by three PC members. Paper selection is based on originality, technical contribution, presentation, and relevance to IDEAR.

Proceedings

At least one author of each accepted paper (including panelists’ position statements) must register with the full fee and present at the workshop in order for the paper to be included in the Proceedings of ISSRE 2018 Workshops. Accepted papers will be submitted to IEEE Xplore and indexed by all the abstracting and indexing partners (such as EI Compendex).

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