IWPD 2014
The 5th IEEE International Workshop on
Program Debugging
November 3–6, 2014, Naples, Italy

Co-Located with ISSRE 2014: The 25th IEEE International Symposium on Software Reliability Engineering

Call for Papers

As software today is larger and more complex than ever before, it is not surprising that the debugging process is also much more difficult and costly. Yet, at the same time, this presents golden opportunities for researchers to produce significant impacts on solving real-world problems. While manual debugging is quickly becoming impractical, techniques that claim to effectively locate a fault have not matured to the desired level of accuracy, consistency, and usability. Among the obstacles that developers face during the debugging process are the ambiguity of distinguishing executions in the presence of multiple causative faults, the difficulty in reliably recording and replaying failed executions, and the uncertainty that bug fixes might introduce more faults into the software. Furthermore, many existing approaches suffer from critical shortcomings that limit their applicability, such as the complexity and lack of scalability of formal verification, the imprecision of static analysis, the high performance cost of dynamic techniques, non-productive human-centric debugging environments, and the high setup and operating costs. Studies are underway to resolve these problems, but researchers often rely on simplified assumptions or model their solutions after methods to handle selected subject programs that do not accurately reflect the complexity in large-scale industrial software and its development process. Practitioners question whether such research proposals can add much value to their work.

The goal of IWPD is to highlight the most pressing challenges and innovative solutions associated with program debugging, especially with respect to software business, methodologies, techniques, environments, and human factors. Experience reports from the industry or empirical studies on these aspects are welcome. IWPD will bring together researchers and practitioners to discuss the latest advancements and determine further challenges that must be overcome in the area of program debugging.

Topics of Interest

The workshop welcomes submissions that cover, but are not limited to, the following topics:

- Strategies for effective and efficient program debugging
- Challenges and emerging techniques in program debugging for large scale real-life applications and domain-specific applications
- Debugging for multi-(core, process, or threaded) programs
- Empirical studies and open source-based benchmarking infrastructure
- Experience reports and industrial best practices
- Impacts of software business, human factors, programming languages, and tool environments on program debugging
- Integrating debugging with other software development and maintenance activities
- Social aspects of program debugging
- Software risk analysis and cost estimation for fault localization, bug fixing, and their social interactions
- Transitioning from research to practice
- Pedagogical models for effectively teaching program debugging

Important Dates

- August 15, 2014:   Submission deadline
- September 5, 2014:   Notification to authors
- September 20, 2014:   Camera-ready copies
- November 3–6, 2014:   The Workshop

Submissions

Submit original papers (not published or submitted elsewhere) with a maximum of 6 pages. Include the title of the paper, 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 the submissions must be written in English, follow the IEEE conference proceedings format, and be uploaded through the workshop submission site at https://www.easychair.org/conferences /?conf=iwpd2014. Each submission will be reviewed by three PC members. Paper selection is based on originality, technical contribution, presentation, and relevance to IWPD.

Panelist Solicitation

There will be a special panel on "*Program Debugging: Transitioning from Research to Practice*" at the workshop. Qualified panelists are solicited to report their experience of applying research methodologies and techniques to debugging large and complex real-life software systems and the challenges that they had to overcome. Interested parties should send a one-page position statement to the Program Chairs, who will make the final decision on the panelists to be invited.

Proceedings and Journal Special Issue

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 to be included in the ISSRE 2014 Supplemental Proceedings. Papers will also be submitted to the IEEE Xplore database and indexed by all the abstracting and indexing partners (such as the EI Compendex). Authors of selected papers will be invited to submit an extended version to a special issue of the *Software Quality Journal* called *Program Debugging: Research, Practice, and Challenges*.

Steering Committee

- W. Eric Wong (chair) University of Texas at Dallas, USA
- T. H. Tse (chair)   The University of Hong Kong, Hong Kong
- Hira Agrawal   Applied Communication Sciences, USA
- W. K. Chan   City University of Hong Kong, Hong Kong
- James A. Jones   University of California, Irvine, USA
- Franz Wotawa Graz   Graz University of Technology, Austria

Program Committee Chairs

- Sudipto Ghosh   Colorado State University, USA
- J. Jenny Li   Kean University, USA