Message from the General Chair and PC Chairs of ICSA 2018

Foreword to ICSA 2018 proceedings

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Abstract—The increasing size of software systems and the emergence of increasingly autonomous systems demands innovative software engineering practices. The way software is being developed and maintained is rapidly changing and must take into account multifaceted constraints like fast-changing and unpredictable markets, complex and changing customer requirements, pressures of shorter time-to-market, and rapidly advancing information technologies, to name just a few of these new aspects. To cope with such constraints, software is increasingly produced according to rapid continuous software engineering development processes. The International Conference on Software Architecture (ICSA), is the premier platform for academia and industry to join efforts in addressing these challenges, bringing innovative solutions to the problems we face in the software architecture domain.

Keywords—software architecture; component-based software engineering; software quality; distributed systems

I. INTRODUCTION

The International Conference on Software Architecture (ICSA 2018) extends the long WICSA and CompArch (CBSE and QoSA) history and tradition as the premier gathering of practitioners and researchers interested in software architecture, in component-based software engineering, and in quality aspects of complex software systems.

ICSA continues the WICSA tradition of a working conference, where researchers meet practitioners and where software architects can explain the problems they face in their day-to-day work and try to influence the future of the field. Interactive working sessions will be the place where researchers meet practitioners to identify opportunities to create the future.

ICSA welcomes original papers that explore and explain the role of architecture in current systems as well as in near future systems, with special focus on self-adaptive, smart, and autonomous systems. This conference looks at what can be learned from our software architecture history, experience, studies, and best practices. The theme of ICSA 2018 is “Breaking Down Barriers”—leveraging advances like cross-functional and cross-national teams, scaling research to industry-scale problems, bridging customer-developer divides, and working in Eoin Woods’s ‘intelligent connected’ world1.

A. Types of Submissions

ICSA 2018 solicited different types of submissions structured into three tracks, namely the main Technical track (included in this volume of the proceedings), and then the Engineering track and New and Emerging Ideas track (included in the companion volume of ICSA 2018 proceedings). The Engineering track solicited short papers and artifacts focused on tools, datasets, and platforms with immediate applicability in the community. The New and Emerging Ideas track solicited short papers with innovative ideas from the academic side of the community. Finally, the Technical track solicited long papers from both sides of the software architecture community, namely of the following two types:

- Technical research papers (10 pages) describing original and significant results of theoretical, empirical, conceptual, or experimental research in software architecture research or industrial practice.
- Experience papers (8 pages) describing significant experience in applying innovative approaches to software architecture domain, and carefully identifying and discussing important lessons learned, so that other researchers and/or practitioners can benefit from the experience.

III. STATISTICS AND REVIEW PROCESS

This year, the ICSA Technical track attracted 95 abstract submissions, 86 full paper submissions, of which 78 were technical research papers and 8 experience papers.

All submitted papers went through a thorough double-blind review process, with each paper receiving three reviews. At the conclusion of the discussion the

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program committee has accepted 22 submissions, which are included in this volume of the proceedings. The papers were all of the highest quality and empirical validity.

B. Awards
Following the tradition of previous ICSA editions, the selection process resulted in a number of awards given to exceptional authors and reviewers. Namely the Best Paper Award and Best Reviewer Award, both selected based on a thorough selection process, and being presented at the closing session of the conference. Moreover, the most influential paper from the WICSA/CompArch 2008 edition was awarded with the Most Influential Paper Award.

II. Conference Program
The contributions of the Technical track were structured into eight topical sessions, and these sessions complemented sessions dedicated to the Engineering track and New and Emerging Ideas track. In all these sessions, special attention was paid to extra space for moderated discussion, facilitated with audience-interaction tools.

Besides these three tracks, ICSA every year also runs the Early Career Researchers Forum, with interactive and mentoring-like program tailored to newcomers in the community, and a number of Workshops and Tutorials, which together created a vibrant environment for learning, discussions, and experience exchange.

C. Keynote Speakers
As the highlight of the program, ICSA 2018 main program offered the following three keynotes by enlightening industrial experts:
- Roger Barga, the General Manager and Director of development at Amazon Web Services, gave a keynote on “Streaming Analytics – The Future of Every Application”.
- Marija Mikic, the Software Engineering Director at Google Los Angeles, gave a keynote on “Software Engineering at Google Scale”.
- Martin Roetteler, a Principal Researcher at Microsoft Research Redmond, gave a keynote on “Q# and the Microsoft Quantum Development Kit”.

IV. Concluding Remarks
Finally, the General chair and the Program Committee chairs of ICSA 2018 would like to thank all members of the ICSA 2018 Organizing Committee, who made the event possible.

Moreover, special thanks from the Program Committee chairs belong to all the ICSA Program Committee members, who invested enormous effort in the paper selection process, and provided valuable constructive feedback to the authors of all submissions, whether accepted or rejected.

We hope that all attendees enjoyed the conference, created new connections within the community, and will join us again next year.

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