

Message from the General Chair and PC Chairs of ICSA 2019

Foreword to ICSA 2019 proceedings

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Abstract—The increasing size of software systems, trends to release software ever more frequently, the emerging hyper-connectivity of systems, and new technology trends such as IoT or AI technologies, demand innovative software engineering solutions. As a consequence, the ways software is developed and maintained are rapidly changing. In addition to technical challenges and the fast pace of technology evolution, software engineers must consider a multitude of other influences such as design and code quality, costs and business risks, market considerations, customer requirements, the ever increasing demand for change, to name just a few. These often conflicting requirements and forces are usually handled by the software architect. 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, ideas and synergies 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 2019) extends the long history of WICSA and CompArch (CBSE and QoSA) conferences, as well as the first joint ICSA conference instances introduced in the previous years. ICSA is 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 one part of the program where researchers meet practitioners to identify opportunities to shape the future.

ICSA welcomes original papers that explore and explain the role of architecture in current systems as well as in future systems. The conference looks at what can be learned from our software architecture history, as well as experience, studies, and best practices in software architecture.

II. TYPES OF SUBMISSIONS

ICSA 2019 solicited different types of submissions structured into the following tracks: the main *Technical Track* (included in this volume of the proceedings), the *Software Architecture in Practice (SAIP) track*, the *Tool Demonstrations track*, the *Early Career Researchers Forum (ECRF-ICSA 2019)* and *New and Emerging Ideas (NEMI) Track* (included in the companion volume of ICSA 2019 proceedings). The ICSA Software Architecture in Practice (SAIP) Track provides practitioners and researchers a platform to present and discuss the most recent innovations and findings in the field of software architecture by means of experience reports and talks. The ICSA 2019 Tool Demonstrations track provides researchers, practitioners, and educators with a platform to present and discuss the most recent innovations and findings in the field of software architecture by means of live tool presentations. The goal of the New and Emerging Ideas (NEMI) track at ICSA 2019 is to encourage the software architecture community to propose new software architecture research visions and ideas, which can potentially challenge the status quo of the software architecture discipline (research and practice) and point to new directions and opportunities. The goal of the Early Career Researchers Forum is to inspire and bring together early career researchers in the field of software architecture. This forum provides a vibrant place for discussing potential and ongoing research at any stage, from ideas to results. In addition, the ICSA program hosted *workshops* and *tutorials*.

III. STATISTICS AND REVIEW PROCESS

This year, the *ICSA Technical track* attracted 108 abstract submissions which led to 96 *full paper submissions*. Apart from few rejected papers that did not fulfill the formal requirements (e.g. double blinding requirement), all submitted papers went through a thorough double-blind review process. Each paper received at least three reviews, while the vast majority of the papers received four reviews. At the conclusion of the discussion phase, the program committee accepted 21 submissions, which are included in this volume of the proceedings. The papers were all of the highest quality and empirical validity.

IV. 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 5 *Exceptional Reviewer Awards*, all selected based on a thorough selection process, and being presented at the banquet of the conference. Moreover, the most influential paper from the WICSA/CompArch 2009 edition was awarded with the *Most Influential Paper Award*.

V. CONFERENCE PROGRAM

The contributions of the *Technical*, *SAIP* and *NEMI Tracks* were structured into twelve technical sessions, presented along with two sessions of the Early Career Researchers Forum, and one session on Tool Demonstrations. In addition, 3 keynote sessions, a discussion panel, and a closing session are part of the program. Besides these core program elements, ICSA run a number of *Workshops* and *Tutorials*, which together created a vibrant environment for learning, discussions, and experience exchange.

As a highlight of the program, the ICSA 2019 main program offered the following three enlightening keynotes by two industrial and one academic expert:

- *Carola Lilienthal*, Workplace Solutions GmbH: gave a keynote on “*Resolving technical debts in software architecture*”.
- *Claes Wohlin*, Blekinge Institute of Technology gave a keynote on “*Moving towards Evidence-based Software Architecture Research*”.
- *Eoin Woods*, Endava gave a keynote on “*Democratising Software Architecture*”.

IV. CONCLUDING REMARKS

Finally, the *General Chair* and the *Program Committee Chairs* of ICSA 2019 would like to thank all members of the *ICSA 2019 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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