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Search Based Software Engineering

Third International Symposium, SSBSE 2011
Szeged, Hungary, September 10-12, 2011
Proceedings
Message from the General Chair

It is my great pleasure to welcome you to the Proceedings of the Third International Symposium on Search-Based Software Engineering, SSBSE 2011, held in the beautiful surroundings of Szeged, Hungary. This year, for the first time, SSBSE 2011 benefited from co-location with a major event, ESEC/FSE, through which we hope to widen our community and welcome many new faces.

Search-Based Software Engineering (SBSE) continues to be an exciting and challenging field to work in, and one that is continually growing. SBSE grew again in terms of the number of submissions obtained this year – our sister event, the Search-Based Software Engineering track at GECCO, also experienced similar growth. SBSE began with the application of metaheuristic search to test data generation in the 1970s. Since then, metaheuristic search has contributed to state of the art results in a plethora of areas that span the entire software engineering lifecycle, including requirements prioritization, automated design, refactoring, bug fixing, reverse engineering and project management.

SSBSE 2011 was the result of the enthusiastic hard work and gracious kind support of several individuals. I have several people to thank. To begin with, I am grateful to Tibor Gyimóthy, General Chair of ESEC/FSE and the ESEC/FSE Steering Committee for allowing us to co-locate with their prestigious event in Szeged, and the support they gave to SSBSE. Thanks in particular are due to László Vidaés and Patricia Frittman, who took care of the local arrangements and the interface between FSE and SSBSE.

SSBSE 2011 featured a strong program. It was a great pleasure to work with Mel CóCinnéide and Myra Cohen, our Program Chairs. I would like to thank them, too, for their hard work in formulating the Program Committee, managing the review process and putting the program together. Of course, the program could not be formed without the work of the authors themselves, whom we thank for their high-quality work. I would also like to thank the Program Committee for their efforts in reviewing and commenting on the papers, thereby providing the authors with valuable feedback. I am also grateful to Westley Weimer, who not only managed the Graduate Student Track, but worked hard to secure funding from the NSF and CREST to ensure that doctoral students could travel and register for both FSE and SSBSE.

It is my great pleasure that SSBSE hosted two exceptional keynote speakers in Andreas Zeller and Darrell Whitley, both well known for their contributions in software engineering and metaheuristic search, respectively. I would also like to thank Mark Harman and Lionel Briand for providing two tutorials for us on SBSE.

Thanks are also due to the Publicity Chairs, Tanja Vos, Mathew Hall and Gregory Kapfhammer. Tanja was instrumental in securing industrial sponsorship for the symposium, while Mathew managed our various social networks on
Twitter, Facebook and LinkedIn. Gregory helped us further spread the word by means of e-mail campaigns. Further thanks are due to Jon Bradley and his team at Ninefootone Creative for designing our excellent website and a new look that was featured in our promotional material.

I am grateful to Alfred Hofmann at Springer LNCS for managing the production of the proceedings for us, and making the process smooth, efficient and unbureaucratic. Thanks to Gillian Callaghan at the University of Sheffield, who assisted me with managing the finances of this event and setting up the online registration process. Throughout the organization of the symposium Mel, Myra, Westley and I received valuable guidance from the SSBSE Steering Committee, chaired by Mark Harman, to whom we are also grateful.

Thanks are also due to our sponsors. Thanks to Berner & Mattner, IBM, the FITTEST project, Softeam and Sulake for funding the best paper prize. While attracting top-quality submissions was key, it was also one of our aims to provide valuable and useful feedback to the authors of those papers, whether their work was accepted or not. I would like to thank SWELL, the Swedish Research School in Verification and Validation, for funding our prize for best reviewer and thus helping us strive toward this goal. Finally, I am also grateful to Ericsson and Sigrid Eldh, our Industrial Chair, for further valuable support, and the University of Sheffield for supporting the symposium both financially and in kind.

If you were not able to attend in person, I hope that you find these proceedings stimulating and thought-provoking. Either way, do consider submitting a paper next year to SSBSE 2012, when the symposium will be co-located with ICSM in Riva del Garda, Trento, Italy.

June 2011

Phil McMinn
Message from the Program Chairs

On behalf of the SSBSE 2011 Program Committee, it is our pleasure to present the proceedings of the Third International Symposium on Search-Based Software Engineering. It was a privilege to serve on this Organizing Committee and we believe that the quality of the program reflects the excellent efforts of the authors, reviewers, keynote speakers and tutorial presenters.

First and foremost we are grateful for the widespread participation and support from the SBSE community. We received 37 papers in the research track and 6 papers in the graduate student track. The papers emanated from institutions in 21 different countries, namely, Australia, Austria, Brazil, Canada, China, Cyprus, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Norway, Pakistan, Portugal, Russia, Spain, Sweden, Turkey, and the UK, so we can claim to have a truly international authorship.

All submitted papers were reviewed by at least three experts in the field. The review period was followed by a moderated online discussion. In the end, 15 manuscripts were accepted for publication as full papers, and three were accepted in the graduate track. In addition we accepted eight papers for presentation as posters during the symposium.

We particularly wish to thank Westley Weimer for running the graduate student track and taking a very active role in reviewing every paper submitted. Graduate students are a vital part of any research field and we are happy that every paper submitted to this track was good enough to qualify as either a paper or a poster.

The topics covered by the accepted papers at SSBSE 2011 included software testing, software release planning, process reduction, project staff assignments, concept identification, scalability, landscape analysis, parameter tuning, concurrency and model-driven engineering. This broad range illustrates how SBSE continues its expansion into new areas of software engineering. For the first time, there was a full session devoted to Fundamentals of SBSE, which is further evidence that SBSE has become an established discipline.

The SSBSE tradition of inviting keynote speakers from both the search community and from the software engineering community continued and we were delighted to announce our two esteemed keynote speakers: Darrell Whitley (search) and Andreas Zeller (software engineering). The symposium started with a short tutorial introduction to SBSE delivered by Mark Harman, one of the original
founders and tireless proselytizers of the field. Lionel Briand presented an valuable tutorial on conducting and analyzing empirical studies in SBSE. We were also very pleased to have a panel of experts from the software engineering community join us for an interactive session where we explored how SBSE can be further applied in software engineering.

We trust that you will enjoy the proceedings of SSBSE 2011 and find them fruitful. We hope to see you at SSBSE 2012 in Trento.

Myra Cohen
Mel Ó Cinnéide
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