

Message from the SBST 2018 Co-Chairs

There is a growing realization that optimization can be applied to many aspects of the software development process: a research area known as Search Based Software Engineering (SBSE). Search Based Software Testing—one of the largest research areas within SBSE—is the process of using search-based optimization algorithms to specifically address problems in software testing. SBST has been applied to a wide variety of testing goals including structural, functional, non-functional and state-based properties. Many approaches to testing and a wide diverse range of development domains have been addressed, including exceptions, interactions, integration, mutation, regression, and web applications.

Work in SBST has developed to the point at which it is now ripe for combination with other areas of software engineering. The common “lingua franca” that makes these combinations possible is the definition of the fitness function that guides a search algorithm. A fitness function is merely a form of a metric, and metrics exist across the entire software engineering spectrum. Therefore, the central objective of this workshop is to bring together researchers and industrial practitioners from SBST and the wider software engineering community to share experience and provide directions for future research, and to encourage the use of search techniques to combine aspects of testing with other aspects of the software engineering lifecycle.

SBST is a two-day workshop aimed at bringing testing researchers together with the broader software engineering community to discuss state-of-the-art work and set new research directions. The workshop will consist of two keynote addresses, several technical paper sessions, a tutorial and a special session featuring the SBST tool contest.

Federica Sarro (University College London, UK) and Kim Herzig (Microsoft, US) will give keynote addresses. Following time for questions, we will ask the speakers to raise issues arising from their talk for participants to discuss. Andrea Arcuri (Westerdals Oslo AST, Norway) will give a tutorial on evaluating search-based techniques with statistical tests.

Three types of contributions were sought after, including:

- Full papers on original research - either empirical or theoretical - in SBST, practical experience of using SBST, or SBST tools.
- Short papers that describe novel techniques, ideas and positions that have yet to be fully developed; or are a discussion of the importance of a recently published SBST result by another author in setting a direction for the SBST community, and/or the potential applicability (or not) of the result in an industrial context.
- Position papers that analyze trends in SBST and raise issues of importance. Position papers are intended to seed discussion and debate at the workshop.

Each paper was reviewed by at least three PC members and evaluated according to the criteria of relevance, novelty, soundness, and ability to spark discussion. Additionally, we have organized a tool competition where we invited researchers, students, and tool developers to design innovative new approaches to software test generation. The developers of these tools will present their techniques and results during the workshop.

The provisional program is as follows:

- Day 1:
 - 8:30 - 9:00am: Introduction
 - 9:00 - 10:30am: Keynote: Federica Sarro, University College London, UK.
 - 10:30 - 11:00am: Coffee Break
 - 11:00 - 12:30pm: Paper Session I
 - 12:30 - 2:00pm: Lunch
 - 2:00 - 3:30pm: Tutorial: Andrea Arcuri, Westerdals Oslo AST, Norway
 - 3:30 - 4:00 pm: Coffee Break
 - 4:00 - 5:30pm: Competition Session

- Day 2:
 - 9:00 - 10:30am: Keynote: Kim Herzig, Microsoft, US.
 - 10:30 - 11:00am: Coffee Break
 - 11:00 - 12:30pm: Paper Session II
 - 12:30 - 2:00pm: Lunch
 - 2:00 - 3:30 pm: Paper Session III
 - 3:30 - 4:00pm: Coffee Break
 - 4:00 - 5:30pm: Awards and Closing Remarks

We are grateful to all authors for their submissions to SBST 2018, and to the Program and Steering Committee members for their valuable time and effort in reviewing the submitted papers. Thank you, and we hope that you enjoy this year's workshop.

Juan P. Galeotti and Alessandra Gorla
SBST 2018 Co-Chairs