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Guest Editorial for the 8th Symposium on Search Based Software Engineering Special Section

Many software engineering activities concern optimization problems characterized by competing goals with a large set of possible choices, for which it is usually hard to find optimal solutions.

Search Based Software Engineering (SBSE) is an approach to software engineering in which search based optimisation algorithms are used to identify optimal or near-optimal solutions and give insight into these kinds of problems. SBSE has been widely investigated to improve many and various software engineering tasks, ranging from project management to software testing and maintenance and evolution, and since its inception around 2010, the community has assisted to a fast and notable increase in the use of SBSE both in research and in practice.

The Symposium on Search-Based Software Engineering (SSBSE), which have turned to its 10th Edition in 2018, has supported the growth of the SBSE community since its inception, by providing both young and world-leading researchers a welcoming venue to discuss their ideas, establish fruitful collaborations, and disseminate their cutting-edge research in this field.

The aim of this special section, which includes two invited extended papers from SSBSE 2016[1], is to acknowledge this growth but also to reflect on how we can go beyond existing methods yet seek for simplicity in order to foster SBSE adoption in the software industry. Both papers in this section are good examples of how SBSE can provide us with valuable results on real-world subjects not necessarily relying on complicated or computational demanding approaches.

The paper “Is Seeding a Good Strategy in Multi-objective Feature Selection When Feature Models Evolve?” by Seber et al. investigates whether or not seeding Genetic Algorithms with solutions previously found would help them find better/faster solutions in the context of evolving software product lines, which has not been explored before.

The paper “Beyond Evolutionary Algorithms for Search-based Software Engineering” by Chen et al. recommends trying simple search techniques before undertaking search-based SE optimization tasks using traditional Evolutionary Algorithms because as shown in the paper this could allow us to obtain the same results but quicker (i.e., with fewer evaluations).

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[1] The papers in this special section are an extended version of two papers selected from the 8th edition of SSBSE (SSBSE 2016, http://ssbse.org/2016/) held in Raleigh, North Carolina, USA, in October 2016, the proceedings of which were published as Lecture Notes in Computer Science by Springer. An initial list of four papers was selected based on the review reports and presentations during the conference and their authors were invited to submit an extended version for this special section. These were subsequently subjected to two regular review rounds, resulting in the two papers presented in this special section.

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