Boolector at the SMT Competition 2018

Aina Niemetz[1], Mathias Preiner[1], and Armin Biere[2]

[1]Stanford University
[2]Johannes Kepler University, Linz, Austria

Abstract—**This paper serves as solver description for our SMT solver Boolector as entered into the SMT Competition 2018. We only list important differences to the version of Boolector that entered the SMT Competition 2017 [8]. For further and more detailed information, we refer to [5, 6, 9, 10], the Boolector website [2] or the source code on GitHub [1].**

Overview

The version of Boolector entering this year's competition is an improved version of the SMT competition version of 2017.

Last year, we entered an experimental configuration of Boolector that used our new SAT solver CaDiCaL [3] as back end in the main track division QF_BV. This year, CaDiCaL is the default back end for division QF_BV of the main track.

In 2016, we introduced an additional engine for quantifier-free bit-vectors, which implements a novel propagation-based local search approach [7] without bit-blasting. As in the SMT competition 2017, a combination of this approach with bit-blasting within a sequential portfolio setting (as described in [5, 7]) is our default approach for the main track division QF_BV. Further, this year this sequential portfolio combination is for the first time also enabled when solving bit-vector ground formulas for the main track division BV.

Configurations

At the SMT competition 2018, Boolector enters the divisions QF_ABV, QF_UFBV, QF_AUFBV, QF_BV and BV of the main track, and the divisions QF_ABV, QF_UFBV and QF_BV of the application track. It uses version *sc17* of our SAT solver CaDiCaL [3] as back-end for division QF_BV of the main track, and the SAT competition 2018 version of our SAT solver Lingeling [4] as back-end for all other divisions of the main and application track.

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Boolector was initially developed by Armin Biere and Robert Brummayer from 2007–2009. From 2009-2012 it was maintained and extended by Armin Biere. Since 2012 it is maintained and extended by Armin Biere, Aina Niemetz, and Mathias Preiner.

License

Since May 2018, Boolector is available on GitHub [1] and licensed under the MIT license. For more details, refer to the actual license text, which is distributed with the source code.

References

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