

AReQS: Abstraction Refinement QBF Solver

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AReQS is an implementation of the 2QBF algorithm AReQS2 [2]. Unlike previous implementations, this implementation does not require CNF input (the original algorithm in fact does not require CNF input either). The formula is maintained in memory while solving is a circuit and translate it to CNF only when the SAT solver is called. It uses `minisat2.2` [1] as the underlying SAT solver.

For CNF instances, a reverse engineering tool by W. Klieber is used [3].

References

- [1] Niklas Eén and Niklas Sörensson. An extensible SAT-solver. In Enrico Giunchiglia and Armando Tacchella, editors, *SAT*, pages 502–518. Springer, 2003.
- [2] Mikoláš Janota and Joao Marques-Silva. Abstraction-based algorithm for 2QBF. In Karem A. Sakallah and Laurent Simon, editors, *SAT*, pages 230–244. Springer, 2011.
- [3] Charles Jordan, William Klieber, and Martina Seidl. Non-CNF QBF Solving with QCIR, 2016.