

# MySolver

Michael Shell  
Georgia Institute of Technology  
Atlanta, Georgia

Homer Simpson  
Twentieth Century Fox  
Springfield, USA

James Kirk  
and Montgomery Scott  
Starfleet Academy  
San Francisco, CA, USA

**Abstract**—This document describes the SAT solver “My-Solver”, a new kind of hybrid solver combining local search, CDCL, and survey propagation.

## I. INTRODUCTION

This instructions provide general guidelines on what a good solver description contains. The sectioning may be changes, as long as the required details are presented.

Notice that the solver description should be specific to the particular version of your solver that is submitted to SAT Competition 2013. Even if you have previously published a paper on a previous version of your solver, simply providing such an earlier paper or just referring to such a paper does not meet the requirements for solver descriptions for SAT Competition 2013.

Notice also that, following the principles of scientific writing, necessary references to known techniques implemented in your solver should be provided. Example reference: [1]

Naming convention for the solver description PDF: name the file according to the name of your solver.

Make sure that page numbering is turned off.

## II. MAIN TECHNIQUES

Which algorithmic paradigm(s) the solver is based on: CDCL, SLS, look-ahead, hybrid (of what), portfolio (of what type of solvers, which solvers) ?

What further solving techniques are used (e.g. preprocessing, restart/learning/... strategies, ...)?

## III. MAIN PARAMETERS

- 1) What are the performance-sensitive parameters (both under user control and internally-used) and what do they control?
- 2) Are there any “magic constants”? What are they?
- 3) What values do these parameters take for the competition?
- 4) Are the parameters dependent on instance properties? If yes, provide on the properties and how they are used.
- 5) ...

Pay special attention to the parameters you have tuned (by hand or automatically) for SAT Competition 2013.

## IV. SPECIAL ALGORITHMS, DATA STRUCTURES, AND OTHER FEATURES

Implementation-level details: special data structures, algorithmic details, ...

## V. IMPLEMENTATION DETAILS

- 1) In which program language(s) is the solver implemented in?
- 2) Was the solver implemented from scratch, or is it based on other solver(s)? Which solver?
- 3) ...

## VI. SAT COMPETITION 2013 SPECIFICS

- 1) In which tracks was the solver submitted to?
- 2) Which compiler (including version) was used?
- 3) What optimization flags were used in compilation?
- 4) 32-bit or 64-bit binary?
- 5) Command-line options? Which solver parameters were set to which values?
- 6) ...

## VII. AVAILABILITY

- 1) Is the solver open source, publicly available? Under which license?
- 2) Provide a URL from which the solver can be downloaded
- 3) ...

## ACKNOWLEDGMENT

The authors would like to thank...

What should not be in the system description:

- 1) Basic definitions related to SAT. (However, any formal notations used in the description should be defined.)
- 2) Empirical results on the solver’s performance.

## REFERENCES

- [1] R. G. Jeroslow and J. Wang, “Solving propositional satisfiability problems,” *Annals of Mathematics and Artificial Intelligence*, vol. 1, pp. 167–187, 1990.