

AbzizPortfolio

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AbzizPortfolio, is a portfolio based approach to solving QFBV SMT problems. Its architecture is based on that used in SATzilla ([1]), where there is a pre-solver that starts solving the problems with a small timeout to filter out easy problems, then if it timed out feature extraction is performed where a feature vector that represents the problem instance is extracted. A linear hardness model for each of the solvers is then used to estimate the expected runtime for each of the solvers based on the feature vector and accordingly the solver with the minimum expected runtime is chosen to solve the problem. If the feature extraction timed out, the problem is solved using a backup solver. The features that we use are qualitatively equivalent to the features used for propositional SAT problems in [2]. The solvers which we used are Boolecor, Mathsat, Sonolar, STP2 and Z3. We used the versions which participated in SMTCOMP2011.

[1] Xu, L., Hutter, F., Hoos, H.H., Leyton-Brown, K.: SATzilla Portfolio-based Algorithm Selection for SAT. *J. of Artificial Intelligence Research* 32, 565-606 (2008)

[2] Nudelman, E., Leyton-Brown, K., Hoos, H.H., Devkar, A., Shoham, Y.: Understanding Random SAT: Beyond the Clauses-to-Variables Ratio. In: *Principles and Practice of Constraint Programming - CP 2004*, 10th International Conference, CP 2004, Toronto, Canada, September 27 - October 1, 2004, Proceedings, Vol. 3258, pp. 438-452 (2004)