Dynamic Algorithm Configuration for Pseudo-Boolean Solving

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- PB solvers use a lot of strategies inherited from SAT solvers
- None of those strategies are better than the others on all benchmarks
- Virtual Best Solver (VBS) is the ideal solver applying the best strategy for each benchmark
- Algorithm Configuration (AC) aims at implementing such VBS
- Dynamic Algorithm Configuration (during runtime) aims at going further than the VBS

Preliminary results

- External Heuristics Selection in Sat4j Pseudo Boolean solvers (hook method called every 1000 conflicts, socket based communication)
- DAC framework applied for choosing a Bumping strategy
- Few features: depth, #decisions, runtime
- Objective: minimizing runtime
- Limited set of benchmarks: 4 training + 4 testing from the same family PB06/SATUNSAT-SMALLINT/submitted-PB06/namasivayam/tsp
  Same number of variables (231) and constraints (2707)