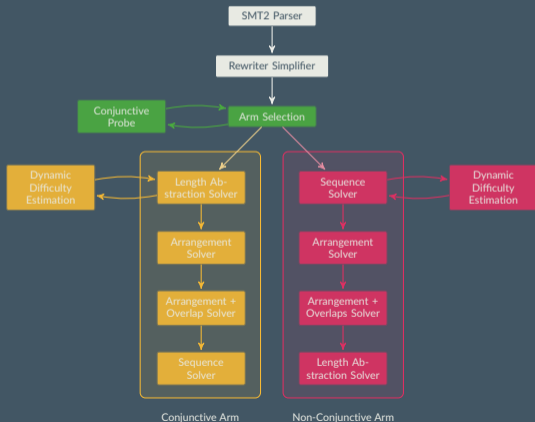


# A Two-Armed String Solver

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- \* Two-armed solver incorporating three sub-solvers:
  - 📦 Z3str3
  - 📦 LAS (Length Abstraction Solver)
  - 📦 Z3seq (Microsoft Research sequence solver)
- \* Arm selection is done via a syntax-driven “probe” that predicts which arm will have the best runtime
- \* LAS is a novel CEGAR-style algorithm that solves abstractions and refinements of integer constraints implied by string equations
- \* Z3str3 leverages a bit-vector reduction to combine the efficiency of an unfolding-based strategy with the ability to reason about unbounded string terms
- \* Sequence solver and LAS augmented with “dynamic difficulty estimation” heuristic
- \* Full system description at <https://z3str4.github.io/smtcomp.pdf>