2018 Research Interest/Project Ideas

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Combining Neural and Symbolic Reasoning

In recent work, we have used deep reinforcement learning in the style of AlphaGo to learn the branching heuristics of a SAT solver, casting this symbolic problem as a form of gameplay (https://arxiv.org/pdf/1802.05340.pdf). In this project, we plan to extend the approach to other forms of symbolic reasoning, in particular proof search in first-order logic. The end result will be a system that learns theorem proving entirely by self-play.