PSL: Proof Strategy Language for Isabelle/HOL

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Abstract

Isabelle includes various automatic tools for finding proofs under certain conditions. However, for each conjecture, knowing which automation to use, and how to tweak its parameters, is currently labour intensive. We have developed a language, PSL [1], designed to capture high level proof strategies. PSL offloads the construction of human-readable fast-to-replay proof scripts to automatic search, making use of search-time information about each conjecture. Our preliminary evaluations show that PSL reduces the labour cost of interactive theorem proving. This submission contains the implementation of PSL and an example theory file, Example.thy, showing how to write poof strategies in PSL.

References

[1] Y. Nagashima and R. Kumar. A proof strategy language and proof script generation for isabelle. *CoRR*, abs/1606.02941, 2016.