

Planning for an Efficient Implementation of Hypothetical Bousi~Prolog

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Abstract

This paper explores the integration of hypothetical reasoning into an efficient implementation of the fuzzy logic language **Bousi~Prolog**. To this end, we first analyse what would be expected from a logic inference system, equipped with what is called embedded implication, to model solving goals with respect to assumptions. We start with a propositional system and incrementally build more complex systems and implementations to satisfy the requirements imposed by a system like **Bousi~Prolog**. Finally, we propose an inference system, operational semantics, and the translation function to generate efficient **Prolog** programs from **Bousi~Prolog** programs.¹

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