

# **Automatic Program Rewriting for Non-Ground Answer Set Programs**

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Answer set programming is a popular constraint programming paradigm that has seen wide use across various industry applications. However, the most intuitive problem encoding is not always the most optimal. Logic programs under answer set semantics often require careful design and nontrivial expertise from a programmer to obtain satisfactory solving times. In order to reduce this burden on a software engineer, we propose an automated rewriting technique for non-ground logic programs that we implement in a system PROJECTOR. We conduct rigorous experimental analysis across various problem domains, which shows that applying system PROJECTOR to a logic program can improve its performance, even matching significant human-performed optimizations.