

Dynamic Lazy Grounding in Answer Set Programming

Brian Hodges, Graduate Student, NLPKR Lab

Faculty Mentor: Yuliya Lierler, NLPKR Lab

One direction of research in Answer Set Programming to allow the solving of formerly difficult problems is lazy grounding, which is more efficient than fully grounding for certain types of programs. In particular, it may provide benefits to the solving of two types of programs, those that have too large of a grounding size to be fully grounded, and those with constraints that are likely to be irrelevant and thus not worth grounding. This project proposes to work towards a system capable of determining whether a program would benefit from lazy grounding before grounding the program, determining which rules within the program to extract to form a partially ground program, and solving the resulting split program. Ideally, the parameters for lazy grounding can also be customized, allowing users with advanced domain knowledge to override the default behaviors of the system.