

Abstract – Samyuktha Ramesh

Thesis Title: Reduction-based Solvers for Multi-agent Pathfinding: Comparing Different Models

Multi-agent path finding (MAPF) is the problem of navigating a set of agents from their starting position to their respective goal position without any collisions. In this thesis, we provide an overview of the current approaches to solving MAPF. We implement six different encodings found in the literature using the Python programming language and the Glucose3 SAT solver. We run experiments on maps of different types and sizes to compare the performances of the encodings.