

## CSCI6505: Assignment 7

This is a larger group assignment which consist of a project that combines several aspects of the material covered in class. You have to demonstrate your project on Thursday, November 28. Also, each group has to submit a proper scientific paper of maximal 6 pages that outlines your approaches, compares different methods, discusses the challenges you encountered, and provides a more general outlook. This paper is due by the end of December 8. Late assignments are not accepted.

The goal of this project is to navigate a mobile robot from a start position to a target position entirely by the aid of an external camera. The start and target positions are specified by letters A and T made from electric tape. Each team can mount an overhead camera to observe the environment. No other sensors are allowed. The environment will also contain some obstacles made from green lego blocks. You should compare two different path planning strategies, one using A\* search, and one using reinforcement learning.

The evaluation of this assignment will be based both on the performance during the demo day and on the discussion in the paper. The robot must be able to reach the target position within 2 minutes without bumping into the obstacles. The evaluation of the paper will be based on the correctness of statements, the quality of the presentation, and the usefulness of the discussion.