

# COSC 370 – Artificial Intelligence

## Project 2

Purpose: Use some “new school” search techniques to solve a tile puzzle.

Task: Create a project that will allow for a number of n-puzzles to be solved via four AI techniques: steepest-ascent hill climbing, first-choice hill climbing, hill climbing with random restart and simulated annealing.

Your program should create 10000 random puzzles of our particular n-puzzle and evaluate each of the techniques based on search cost and percentage of solved problems. You should generate a new batch of 10000 puzzles before running each agent.

n is input by the user and will always be one less than a square number (for instance 8, 15, 24, etc.). The smallest n you should allow is 8. Make sure your output is clear and informative.

You should include in your turn-in a short (1 page) discussion on your observed results including why you think each particular strategy worked better or worse than others. This is in addition to your code.

You are required to work in teams of 2 for this project. Team requests are due by 5pm, Monday, February 14<sup>th</sup> and you may not work with your partner from project 1. If you do not have a team request in at this point, you will be assigned a random partner.

DUE: February 25<sup>th</sup> at 11:59pm in the Digital Dropbox