CECS 451
Assignment 2
Total: 14 Points

General Instruction

- I recommend you can write your answer using LaTeX.

- Submit a PDF file in the Dropbox folder via BeachBoard (Not email).

- Simple reasoning is required, otherwise you will get half of the points.

1. True or False?

    (a) (2 points) Assume that a rook can move on a chessboard one square at a time in vertically or horizontally, but cannot jump over other pieces. Manhattan distance is an admissible heuristic for the problem of moving the rook from square A to square B in the smallest number of moves.

    (b) (2 points) Genetic algorithm (GA) is equivalent to a random walk in search space because GA uses a random function.

2. (6 points) The heuristic path algorithm is a best-first search in which the evaluation function is $f(n) = (2 - w)g(n) + wh(n)$. What kind of search does this perform for $w = 0, w = 1,$ and $w = 2$?

3. Is the algorithm guaranteed to converge to a solution?

    (a) (2 points) Simulated annealing

    (b) (2 points) A* algorithm