AI Snake Game

Department of Computer Science and Engineering
California State University, Fullerton

CPSC 481: Project Proposal

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Submission Date: [ ]
Fall 2024 - CPSC 481
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Datasets

No external datasets will be used. Game data like snakes, food, and walls, will be generated in the game.

Is there an existing code? If so, what will you add to it?

Snake game templates exist online, but we will be building our own game from scratch to better understand and customize the mechanics of the game.

Algorithm being applied / your approach (how does it relate to what we're covering?)

We will implement A* search to help the snake find the shortest path to food. Maybe add a greedy algorithm to find the closest food when multiple foods appear.

Timeline/plan for finishing the project

1. Week 1-2: Develop the basic snake game
2. Week 3: Implement game-over logic
3. Week 4-7: Develop the AI using A* search
4. Week 8: Test, debug, and polish the game

Special implementation details

The game will have multiple game modes including a regular player-only mode, an AI-only mode, a player vs AI mode, and potentially AI vs AI mode. It could also have multiple map sizes for different difficulties and walled vs no wall maps, where you go through the bounds and appear on the other side.

Roles and responsibilities

Everyone will take part in developing the game, the AI, testing, and debugging.