



## Project Proposal

### Title Snake Game

### Submitted by:

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### PROJECT STATEMENT:

Snake Game
Snake game is a computer action game, whose goal is to control a snake to move and collect food in a map. In this paper we develop a controller based on movement rating functions considering smoothness, space, and food. Scores given by these functions are aggregated by linear weighted sum, and the snake takes the action that leads to the highest score. To find a set of good weight values, we apply an evolutionary algorithm. We examine several algorithm variants of different crossover and environmental selection operators. Experimental results show that our design method is able to generate smart controllers.

### PROJECT OBJECTIVES:

The goal of our application is to build a model that aims to keep pace with the snake as a toy and control it in terms of movement and food collection using a model of artificial intelligence.

The player loses when one of two conditions occurs:

1. The snake crashes into a wall.
2. The head of the snake crashed into its own body.

#### TOOLS:

In the game of Snake, the player uses the arrow keys to move a "snake" around the board. As the snake finds food, it eats the food, and thereby grows larger. The game ends when the snake either moves off the screen or moves into itself. The goal is to make the snake as large as possible before that happens

Used program tool: python – Greedy algorithms – design tools by python

#### REFERENCES:

1. <https://www.kosbie.net/cmu/fall-10/15-110/handouts/snake/snake.html#:~:text=In%20the%20game%20of%20Snake,as%20possible%20score%20is%20the%20length%20of%20the%20snake,when%20it%20is%20killed>
2. <https://www.louisbourque.ca/AI-Snake-Game/>
3. [https://www.researchgate.net/publication/309390260 Snake game AI Movement rating function based optimization](https://www.researchgate.net/publication/309390260_Snake_game_AI_Movement_rating_function_based_optimization)