

AI Semester Project Proposal

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Snake

About

Snake is a common childhood game in which the player maneuvers a line that grows in length, with the line itself being the main obstacle. The original concept of this game comes from a 1976 arcade game called *Blockade* which has now birthed many different versions on multiple platforms, some called snake and some called worm.

Real-World Application

This game's significance for real world applications has to do with edge detection. This is a crucial step in image processing in order to mark the point where the light intensity changed significantly which is widely used to detect gray-scale and colour images in various fields such as medical image processing, machine vision system and remote sensing.

Algorithms & Heuristics

Algorithms and heuristics needed to implement this game should include a shortest path such as breadth first search or depth first search, a longest path, and the hamilton cycle.

Sources:

1. [https://en.wikipedia.org/wiki/Snake_\(video_game_genre\)](https://en.wikipedia.org/wiki/Snake_(video_game_genre))
2. http://www.ecei.tohoku.ac.jp/alg/nishizeki/sub/j/DVD/PDF_J/J075.pdf
3. <https://www.cse.unr.edu/~sushil/class/381/notes/AIGDch04.pdf>