

Path Planning for Non-Playable Characters in Arcade Video Games using the Wavefront Algorithm

Abstract

Search and planning is a common Artificial Intelligence task on videogames development. This exercise covers the design of Non-player character (NPC) behavior, content generation, and narrative's construction. This work focus on NPC behavior, specifically on path planning. This paper presents an implementation of an arcade videogame (Ms. Pacman type) with Unity, where the NPC's behavior (Ghosts) applies the Wavefront algorithm to find the shortest path to the Player Character (Mr. Pacman). This algorithm is an alternative to traditional algorithms the Dijkstra algorithm and A-star used to solve this problem.