How Does Visualising RRT Pathfinding in an NPC Effect the Perceived Intelligence of the NPC?

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***Abstract*—The abstract goes here.**

I. Introduction

INTRODUCTION section

A. What is (are) the key research question(s) that you will seek to answer in your project?

How does visualising RRT path finding in an AI agent effect the perceived intelligence of the agent?

How does visualising RRT path finding in an AI agent effect the the way players navigate a level of game?

B. How will answering these questions contribute to the state of knowledge in the field of your project?

Papers have looked at visualising and foregrounding AI but not at what effect this has on the player's perception of how intelligent the agent is.

The question proposed in this paper is: how does visualising RRT path finding in an AI agent effect the perceived intelligence of the agent in digital games?

While visualising and foregrounding AI in games has been looked at previously [] the effects on perceived intelligence have not been researched??

The aim of the paper is visualise RRT path-finding on an AI agent in a game .....

C. Hypothesis:

Null: Visualising RRT has no effect on perceived intelligence of the AI.

II. Literature Review

A. Visualising Data/AI

Haworth *et al* research visualising decision trees in games to see what effect it had on children's analytical reasoning and game play [1].

While they did not come any definite conclusions their results suggested that data aided players in playing the game. However an issue they noted was that the game could be unbalanced at the end making the usefulness of the tree being displayed questionable.

Haworth *et al* only made a simple game that was tested on children. In contrast Isla visualised pathfinding in a game that is now for sale?? (Word it better) [2].

Bauer *et al* also research visualising tree structures? [3]. They used Rapidly-Exploring Random Trees (RRT) in level design tools to predict possible moves the player could make. They visualised

CHECK Cook *et al* surveyed many games that foreground AI and proposed design patterns for different methods of foregrounding AI. The method proposed in this paper is similar to their design pattern Visualising AI. Third Eye Crime is a game that followed this design pattern [2]. Third Eye Crime displayed the enemy's path finding to the player using Occupancy maps.

This was designed to make the player want trigger the mechanic ... Similarly the pathfinding visualisation

B. Pathfinding

In digital games the A* path finding algorithm appears to be the be the most widely used [4].

Third Eye Crime [2] visualises enemy path finding as the main mechanic. Isla uses occupancy maps this does not produced an exact path but shows the probability of the players being in an area.

Algfoor *et al* surveyed numerous papers on path finding.

Wang and Lu looked at path finding in 3D while the paper applied to planes it may be relevant here... [5]

PAPER ON RRT

III. Methodology

A. What methodology will you use to seek answers to these questions?

The methodology will be involve human participants who will play one variation of the game. The four variations are firstly a version of the game with no visible pathfinding where the enemy will follow a pre defined route. The second variation will have a visual tree in front of the enemy but it will be random and not seeking the participants. Thirdly will use RRT path finding to seek out and move towards the participant. Finally will be a version that always know the participant's position and is therefore always moving towards them.

While the participant is playing the game will export their location to a CSV file every second for use in R. There will also be a questionnaire for the participants to fill out after completing the play test.

B. Preliminary Results

What preliminary results have you obtained? None??

IV. Conclusion

The conclusion goes here.

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