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

1507866

Abstract—**The abstract goes here.**

I. INTRODUCTION

THIS demo file is intended to serve as a "starter file" for your final year project dissertation. Use this template for your literature review and proposal in COMP320, which you will then expand into your dissertation in COMP360.

II. RESEARCH QUESTION

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

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

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

C. Hypothesis:

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

III. 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].

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

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.

FIND NAME *et al* surveyed numerous papers on path finding.

FIND NAME looked at path finding in 3D while the paper applied to planes it may be relevant here...

PAPER ON RRT

IV. 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?

V. CONCLUSION

The conclusion goes here.

REFERENCES

[1] R. Haworth, S. S. T. Bostani, and K. Sedig, "Visualizing decision trees in games to support children's analytic reasoning: Any negative effects on gameplay?" *Int. J. Comput. Games Technol.*, vol. 2010, pp. 3:1–3:11, Jan. 2010. [Online]. Available: http://dx.doi.org.ezproxy.falmouth.ac.uk/10.1155/2010/578784

[2] D. Isla, "Third eye crime: Building a stealth game around occupancy maps," in *Proceedings of the Ninth AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, ser. AIIDE'13. AAAI Press, 2014, pp. 206–206. [Online]. Available: http://dl.acm.org/citation.cfm?id=3014712.3014745