A Framework for more Dynamic NPC Interactions

ABSTRACT

Advancements in technology have allowed graphics in games to progress radically. However, AI in games remains relatively unchanged despite the exponential increase in processing power. The AI in games is often scripted to work in predictable ways, and while this works for some genres of games, for others it leads to a dull and repetitive experience. The purpose of this research proposal is to create a framework in which NPC-player interactions are made more dynamic and engaging to the player. The focus will be on NPCs in RPGs. A new framework will be created by exploring the advancements and shortcomings of contemporary AI systems.

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WHAT IS YOUR RESEARCH PROBLEM STATEMENT?

Create a framework for NPCs that is more dynamic and engaging for players than modern equivalents.

WHY YOUR RESEARCH IS IMPORTANT?

Creating a more dynamic AI could be useful in a variety of ways. For example, when applied to modern video games they could extend player game time thereby increasing monetary returns; or for the purpose of creating simulations where each AI Agent has its own interests and bases all interactions around those interests.

WHAT IS THE EXISTING RESEARCH LITERATURE IN THE AREA?

There is an abundant amount of research on Artificial Agents that use a variety of systems and frameworks. The most notable example in video games is the Radiant AI developed by Bethesda for their RPG titles such as *The Elder Scrolls* and *Fallout* series. Most frameworks

are modelled around Human emotions or needs. For example, the Belief, Desire, and Intention (BDI) design.

WHAT IS YOUR PROPOSED RESEARCH METHODOLOGY?

- Research literature on different frameworks and models for individual agents and compare their strengths and weaknesses
- Quantitative and qualitative surveys based on NPC sophistication, play time, and player engagement.
- Qualitative research by playing games with different NPC systems.

WHAT RESOURCES WILL YOU NEED TO CARRY OUT THE RESEARCH?

- Access to the Internet
- Willing survey participants
- Access to digital libraries

WILL YOU RESEARCH NEED APPROVAL FROM AN ETHICS COMMITTEE?

Maybe depending on who is required to participate in the surveys.

REFERENCES

Aylett, R., Dias, J., & Paiva, A. (2006). *An affectively driven planner for synthetic characters.* Porto Salvo: American Association for Artificial Intelligence.

Mooney, J., & Allbeck, J. M. (2014). Rethinking NPC Intelligence - A New Reputation System. *MIG '14: Proceedings of the Seventh International Conference on Motion in Games* (pp. 55-60). New York: Association for Computing Machinery.

Oliveira, M., & Santos, P. A. (2019). A model for socially intelligent merchants. *FDG '19: Proceedings of the 14th International Conference on the Foundations of Digital Games* (pp. 1-8). New York: Association for Computing Machinery.