

Dynamic AI In Games Through Adaptation to Player Choices

ABSTRACT

Games do not always cater to how a player wants to play a game, through various downfalls in their systems or just the style of the game that they are. Some of these downfalls in the systems could include the moral systems or just various gameplay systems. Many games have a moral system in them, yet they do not truly affect the game world, making them seem redundant. If there was a system that would change how the AI reacts to player choice through their choices in the moral system as well as their play style, would make a much more interactive and catered experience for players. For many games will push to play in one sort of play style rather than letting the player experiment with how they want to go about it. This would need the analysis of various systems that are already in games, and try to make a theoretical framework in which would allow AI to adapt to player choice, increasing player engagement and enjoyment.

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WHAT IS YOUR RESEARCH PROBLEM STATEMENT?

The purpose of this research is to make a theoretical framework in which player choices affect how the game world reacts to them, whether that be through their moral choices or how they play the game.

WHY YOUR RESEARCH IS IMPORTANT?

Games have player choice, yet in most of them the choices do not change how the game progresses, the way the AI is structured could give players more options in terms of how they want to play the game, increasing enjoyment and overall interactivity. A large part of this would be a moral system that is not black and white, as often that can subtract from the experience as often the player is told what option is the good or bad option, making their choice seem redundant. The other part of this system would be to make it so the game provides a system in which takes into account how the player plays the game, in terms of whether they play stealth, aggressive combat orientated or diplomatic. The AI would adapt,

becoming more challenging as well as giving more quests in the style of the players play style.

WHAT IS THE EXISTING RESEARCH LITERATURE IN THE AREA?

There is a fair amount of existing research on terms of how the current way of dynamic scripting for ai works. Yet there does not seem to be too many which interact with changing the based on the player decisions, moral and play style, mainly through difficulty scaling.

WHAT IS YOUR PROPOSED RESEARCH METHODOLOGY?

The proposed research methodology is to analyse various other systems and see what they do well and where their shortfalls are, thereby being able to create a framework for how a better system could be implemented. Such systems could include the *Nemesis System* from *Shadow of Mordor*, *Skyrim's* levelling system, *Star Wars: Knights of the Old Republic's* morality system and *Fallout 3's* morality system.

WHAT RESOURCES WILL YOU NEED TO CARRY OUT THE RESEARCH?

- PC
- Internet
- Research Articles
- Books
- Word Processing Software

WILL YOUR RESEARCH NEED APPROVAL FROM AN ETHICS COMMITTEE?

N/A

REFERENCES

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2. <https://link.springer.com/article/10.1007/s10994-006-6205-6> Adaptive Game AI with Dynamic Scripting.
3. <https://escholarship.org/uc/item/004129jn> The Grail Framework: Making Stories Playable on Three Levels in CRPGs