From NPC's to Intelligent Antagonist: The AI Revolution in Gaming

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Figure 1 Fallout New Vegas NPC: https://imgix.ranker.com/list_img_v2/3582/2123582/original/the-very-best-npcs-and-companions-in-the-fallout-games-u1

Introduction

There are many purposes of AI controlled players in games, as without them video games would not be the same as we know them today. AI controlled players allow games to have more depth, they provide as a use for Non-Playable Characters that feed the player information such as Quest objectives, items, combat and more. If this AI was non-existent, game developers would have to find a way to feed the player all types of information that the AI would normally do. This would result in dull gameplay that would feel bland and require a lot of reading as information would have to be given to the player via notes or some other static method.

The introduction of Artificial Intelligence in video games dates all the way back to 1972 with the release of "Pong". This videogame utilised AI to simulate a second player, whom the player will be against, the AI's main goal was to align its centre with the balls vertical position, making it a basic form of "tracking" AI.
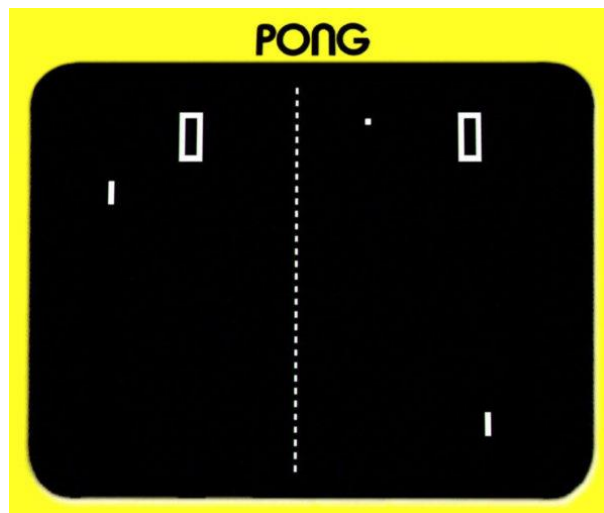

Figure 2 Pong: https://silverballmuseum.com/wp-content/uploads/2016/05/pong-arcade-game-atari-600x506.jpg

However, times have changed and Artificial Intelligence within videogames has developed substantially. AI can now: create seamless conversations between NPCs and players, utilise dynamic difficultly adjustment to match the players skill level to create a sense of challenge and, create immersive storytelling. I will go into more depth in this blog, of what AI has the ability to do now considering its developments.

The Success Within Videogame AI

The introduction of AI-controlled players in video games has significantly transformed the landscape of gaming, creating more dynamic and challenging environments. These AI players are not just programmed to react; they are designed to adapt and evolve, learning from players actions to continuously enhance their strategies. This capability not only makes games more engaging but also unpredictably challenging, mirroring a human-like unpredictability that can greatly enhance the player's experience.

However, the impact of AI extends beyond just gameplay. For game developers, AI-controlled characters offer a canvas to experiment with complex narrative structures. By integrating AI that can make autonomous decisions, the storyline can diverge in numerous ways depending on player interactions, leading to a highly personalised gaming experience. This can result in a deeper emotional connection to the game, as players see their choices actively influencing the game world. An example of this complex player AI is within the game "Fallout 4", this game includes over 110,000+ lines of unique dialogue that NPCs can choose from, each line is chosen based upon the players prior decisions in game.

Figure 3 Fallout 4 Dialogue options : https://imgs.search.brave.com/mpBQHF8889Wsr3Ba382EMSk8-c6xMhaxgQKTdJyzXBg/rs:fit:860:0:0/g:ce/aHR0cHM6Ly9ub3dt3dt/b2RzLmNvbS93cC1j/b250ZW50L3VwbG9h/ZHMvMjAyMS8wOC9G/dWxsLURpYWxvZ3Vl/LUludGVyZmFjZS0w/Ny0xMTcweDDY1OS5g/cGc

Despite these advancements, the detailed application of AI in games often lacks visibility. For instance, while many players appreciate the enhanced challenge AI opponents provide, they may not recognise the underlying sophisticated mechanisms that adjust AI behaviour or its contribution to storytelling.

The Future Of AI Withing Gaming

With the advancements in artificial intelligence, Non Player Characters (NPCs) are becoming increasingly sophisticated, offering more realistic and personalised interactions. AI controlled players are no longer restricted to following scripted patterns, instead they can adapt to the players actions and make real-time decisions, thus creating a more immersive and challenging gaming experience.

As AI technology continues to evolve, the future of AI controlled players in video games holds immense potential. With the rise of deep learning and machine learning algorithms, NPCs will not only adapt to players actions but also learn from them, continuously improving their behaviour and decision making abilities. This means that in the future AI controlled players will become even more humanlike and the player will struggle to differentiate between NPCs and real players. Furthermore, as Virtual reality and augmented reality technologies become more mainstream, the integration of AI controlled players will take gaming experience to unexplored levels of realism.

Figure 4 VR:
https://imgs.search.brave.com/x3hoHEsXfCysOlg6WYfNVXMjpcbPCFyHow3eOqUHarA/rs:fit:860:0:0/g:ce/aHR0cHM6Ly9tZWRp/YS5nZXR0eWltYWdl/cy5jb20vaWQvMTM1/MTE0MTE2MS9waG90/by93b21hbi13ZWy/aW5nLXZyLWdsYXNz/ZXMtcy5qcGc_cz02/MTJ4NjEy/PTl wJmM9QWRiQXRS/MU

In conclusion, with advancements in artificial intelligence, the future of AI within gaming is a vast ocean yet to be fully explored. Technologies like VR are set to revolutionise gameplay, potentially integrating real-time AI into characters. This could allow NPCs to respond to players questions in VR, sourced from platforms like OpenAI, opening up new unprecedented levels of immersion and interaction.