

# Using Large Language Models as Non Player Character in Role Playing Games

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**Abstract.** In recent years, with the rapid development of artificial intelligence (AI), we have been inspired by ChatGPT and integrated games with ChatGPT, following the prototype AI village. This fusion introduces AI technology to the NPCs (Non-Player Characters) in pixel RPG games, successfully addressing the stiffness of traditional scripted dialogues.

In the game, players take on the role of a student studying normally at school, gradually uncovering the truth behind a series of mysteries. A special NPC is set up in the game to assist players in advancing the plot. Players can converse with this NPC, discuss clues, and reveal the truth of the story together.

This NPC is different from those in traditional games with fixed scripts because it incorporates OpenAI models, allowing it to respond more flexibly and intelligently to players' questions and discussions. This also demonstrates the hidden utility of artificial intelligence in game development, bringing new possibilities for future game design.

**Keywords:** AI village, NPC, OpenAI models, RPG games.

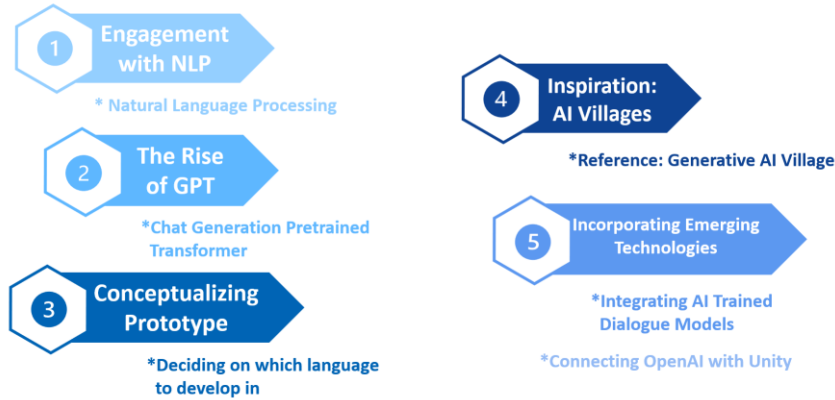
## 1 Research Background and Motivation

### 1.1 The motivation for creating the game

This is a 2D suspenseful horror text game built with Unity.

While choosing the theme, I came across NLP, which stands for Natural Language Processing. This sparked my interest, and I delved into it for a while. After some practice, I encountered the rising trend of Chat GPT. Following that, I began contemplating research avenues surrounding this theme. (see Fig 1)

## Motive for creating the game



**Fig. 1.** This is our initial game design plan.

### 1.2 Game Design Background

Before the actual production began, the guiding teacher provided a lot of reference materials, such as the Generative AI Village, to help everyone figure out where to start (see Fig. 2)

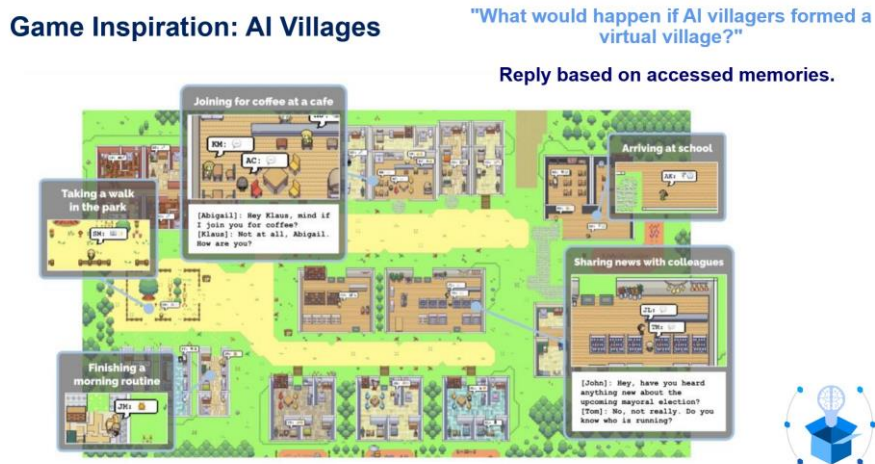
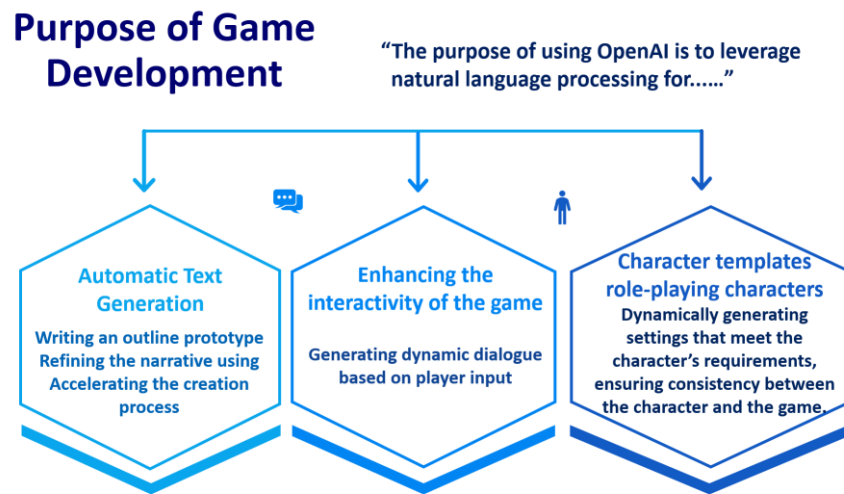


Figure 2

**Fig. 2.** In the AI Village, AI characters receive parameters from the environment, such as the status of doors, the condition of tables, or the states of other characters. These

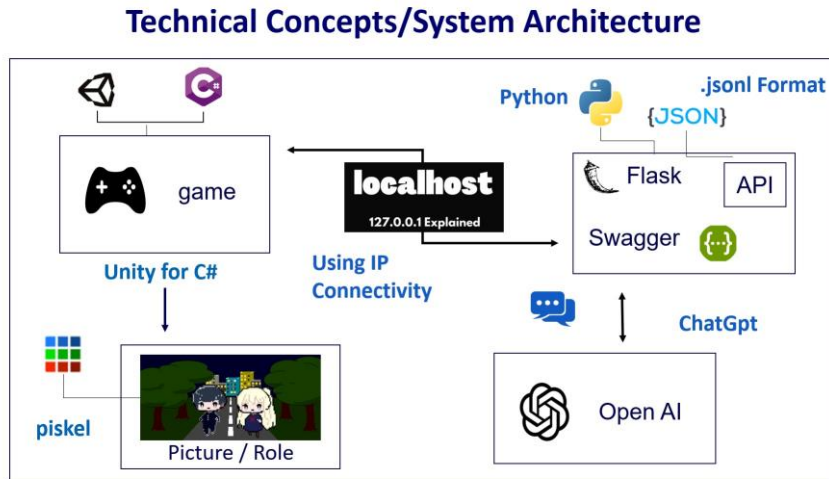
parameters are constantly fed to the AI characters every second, and the characters generate action responses accordingly, displayed with emoticons. The concept of the AI Village involves feeding environmental parameters to the villagers, while the research direction is to feed scripts to the NPC, Alison, in the game.

### 1.3 The process of using OpenAI (see Fig. 3)

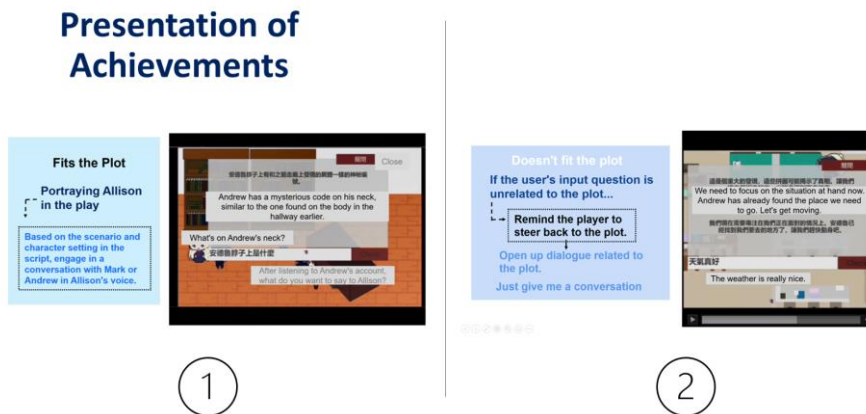


**Fig. 3.** The first step is to outline the overall framework and then allow GPT to refine the characters and plot descriptions to accelerate the overall creation process. The dialogue of the characters must conform to their settings and cannot deviate from the plot, so it is necessary to check and correct multiple times, provide more data to GPT, and ensure it achieves the desired results.

#### 1.4 Technical Concept and System Architecture (see Fig. 4.)



#### 1.5 Presentation of Achievements (see Fig. 5)



**Fig. 5.** We have successfully enhanced the existing game framework with a more flexible AI chat system. This research has made a significant breakthrough in improving the flexibility of NPC dialogue interactions in games, allowing fictional characters in the game to surpass the framework of traditional scripted plots and demonstrate more autonomous and intelligent conversational responses.

## References

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