COMP 390 - Real-Time LLM Dialogue

Spring 2025 Computer Science Junior Seminar

Date   Mar 18, 2025

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Meeting   📅 Max Tulley and Teddy Pozo

Background and context

My literature review looks into cases of AI and LLMs used in video games, specifically real-time LLMs used for dialogue generation and NPC behavior. My project will be a top-down RPG which uses AI/LLM for dialogue and NPC behavior. I will have to train an AI model for this purpose and, if necessary or beneficial, alter the training for each character.

I have two ideas for a mini-project. The first would be to train an LLM specifically for dialogue generation/NPC control in my game world. I would use an existing

LLM and tweak it for this purpose. This is testable, since I can check the validity/consistency of the LLM dialogue.

My second idea for the mini-project is to create a game demo with an integrated LLM. In this case, the LLM would be untrained and I would focus solely on getting the LLM to work within the game. This goal is specific and testable as well. The advantage of doing this instead of the other mini-project, is that it guarantees that the LLM will work within the game, before I spend any time fine tuning it. I wouldn't want to spend time working on an LLM and then find out that I can't integrate it into a game.

Methods & evaluation

For this idea, I would like to make a game demo that uses an LLM for dialogue.

My standards would be that players can type into a textbox when interacting with an NPC and the NPC will give a response. The response does not have to be completely coherent and consistent, it just needs to be integrated into the game.

The minimum goals would be to have a demo with one scene and one NPC. Stretch goals would be to start working on training the LLM for better coherency and consistency.

Scope and deliverables

Mini-Project:

Deliverable	Description
Minimum: Build a working game demo with one room and one interactable NPC	Have a working player character, two NPCs, and a dialogue system.
Stretch goal 1: Add more scenes and NPCs	Build out the game demo

Mini-Project:

Deliverable	Description
Stretch goal 2: Start training a customized LLM	Use an existing LLM and alter it for the purpose of NPC dialogue/behavior

Milestones

Game Demo:

Completion date	Project phase	Description
Mar 20, 2025 1:30 PM	Milestone 1	Find assets for game
Mar 27, 2025 1:30 PM	Milestone 2	Implement character movement
Apr 3, 2025 1:30 PM	Milestone 3	Add testable NPCs
Apr 8, 2025 1:30 PM	Mini-Project Due	Add dialogue system

Related projects:

AI-dungeon, skyrim mod for LLM dialogue.