AI Literacy & Game-Based Learning

Companion Resource, October 2024, GC TLC

Prompt Engineering for Game-Based Learning (GBL)

Prompting Method	Description	Example Prompts for GBL
Zero-Shot	The model is given a task with no examples.	*Generate a category of Jeopardy! clues for basic Python syntax.*
Few-Shot	The model is given a few examples to guide its task performance.	*Create a math-based escape room puzzle using the equations listed below to unlock clues: [Example 1, Example 2, ...].*
Chain-of-Thought	The model is instructed to walk through its reasoning step by step.	*Run a turn-based game where players predict the next word in a sentence and receive chain-of-thought explanations for each prediction*
Instruction-Based	Explicit instructions guide the model's output and responses according to specified conditions.	*Develop a role-playing game where students assume policymaking roles in a democratic society and must debate then vote on timely issues in scaffolded ways.*
Contextual Priming	The model is primed with contextual details before executing a task.	*Given the context of environmental sustainability, create a simulation game where students must balance resources to maintain an eco-friendly city.*
Role Assignment	Assigning a role or persona to the model to guide its responses.	*As a dungeon master in a tabletop RPG, narrate a scenario where students solve scientific riddles to defeat challenges.*
Interactive/Iterative	Back-and-forth refinement of prompts based on the model's responses.	*Create an evolving problem-solving scenario where students must debug code snippets with customizable subject matter.*
Meta Prompt	Instructing the model to generate a reusable prompt for future use or sharing	*Create a meta-prompt for instructors to create scaffolded text adventure games that teach key terms and disciplinary concepts*

Glossary of AI Terms

AI Model: A computational system trained to perform tasks requiring human-like intelligence, from recognizing objects or sounds to generating text, image, or media content.

Modeling: The process of creating AI models by identifying patterns from dataset inputs.

Large Language Models (LLMs): AI models trained on vast amounts of text data capable of processing human input and generating human-like output across both simple and complex tasks.

Primitives: The basic building blocks used by neural networks or AI models to compose more complex patterns, similar to shapes used in drawing or basic structures in language.

Prompt Engineering: The process of crafting inputs (prompts) for AI models to elicit specific, desired outputs (results).

Seed Prompt: An initial input or starting text provided to an AI model, particularly in generative models, to guide the model's output and shape the direction of its response or content generation.

Tails: The edge cases or outliers in a dataset, found at the far ends of a statistical distribution. These points can disrupt a model's performance because they don't conform to the usual trends the model has learned.

Token: A discrete unit of text—such as a word, subword, or character—that AI models process individually to interpret and generate language.

Training Data: When human-generated data is used to teach an AI to model patterns, relationships, such that the quality and diversity of training data heavily influence AI's performance and accuracy.

Variability: The extent to which data points differ within a dataset. A dataset with low variability is consistent, while high variability suggests frequent fluctuations, affecting the model's stability.

This document is licensed by Zach Muhlbauer under the public domain.
Portions of the content were generated with the assistance of ChatGPT-4.


Notes & Reflections