

Project 94: Instruction vs. Role Prompt Comparison Tool

Description:

This tool compares two popular prompting styles—**instructional** (e.g., “Write a poem”) vs **role-based** (e.g., “You are a poet...”). It shows how each affects tone, creativity, and clarity in the model’s response.

prompt_style_comparator.py

```
import os
import openai
import gradio as gr

# Load OpenAI API Key
openai.api_key = os.getenv("OPENAI_API_KEY")

# Function to compare instruction vs. role prompts
def compare_prompts(task_description):
    try:
        # Instruction-style prompt
        prompt_instruction = f"Write a response for the following task:\n{task_description}"

        # Role-style prompt
        prompt_role = f"You are an expert in this task. Respond accordingly.\n{task_description}"

        # Call OpenAI twice for both styles
        instruction_response = openai.ChatCompletion.create(
            model="gpt-3.5-turbo",
            messages=[{"role": "user", "content": prompt_instruction}]
        )

        role_response = openai.ChatCompletion.create(
            model="gpt-3.5-turbo",
            messages=[{"role": "user", "content": prompt_role}]
        )

        return instruction_response["choices"][0]["message"]["content"].strip()
```

```

except Exception as e:
    return f"Error: {str(e)}", ""

# Gradio interface
iface = gr.Interface(
    fn=compare_prompts,
    inputs=gr.Textbox(label="Enter Task (e.g., Write a motivational quote, Exp
    outputs=[
        gr.Textbox(label="Instruction Prompt Output"),
        gr.Textbox(label="Role Prompt Output")
    ],
    title="📄 Instruction vs Role Prompt Comparison",
    description="Enter a task and compare how GPT responds using an instructio
)

# Launch it!
iface.launch()

```