NarrativeNet: AI-Driven Novel Generation and Narration

Abstract

This project presents an AI-powered application that generates multi-chapter novels based on user-selected genres and optional custom prompts. The system leverages Hugging Face's microsoft/phi-4 model via Nebius for advanced story generation, integrated into a browser-based interface built with Streamlit. It includes text-to-speech (TTS) capabilities using pyttsx3, allowing users to listen to the generated stories.

Introduction

AI-based text generation is transforming storytelling, enabling machines to craft compelling, human-like narratives. This project aims to provide an interactive, web-based platform that lets users generate full-length novels using cutting-edge open-source models. The tool supports multiple genres, user-defined prompts, chapter navigation, and voice narration.

Tools Used

- Streamlit - For the interactive user interface

- Hugging Face InferenceClient - Access to the Phi-4 language model

- Microsoft Phi-4 - Large language model for text generation

- pyttsx3 - Offline text-to-speech engine

- dotenv - Secure API key management

- Python - Core language for logic and integration

Steps Involved in Building the Project

1. Set up a virtual environment and install dependencies.

2. Integrate Hugging Face's `InferenceClient` to use `microsoft/phi-4` via Nebius.

3. Build a Streamlit frontend with genre selection, prompt input, and chapter navigation.

4. Implement pyttsx3 for local text-to-speech playback using chapter text.

5. Use session state for smooth UI updates and chapter tracking.

Conclusion

NarrativeNet showcases how open-source LLMs can be deployed to craft full-length novels with natural language flow and speech integration. The result is a user-friendly storytelling assistant that blends creativity with voice. Future extensions may include animated scenes, GPT-4/Claude integration, or multi-language support.