ABSTRACT

AI Language Learning Companion

The **AI Language Learning Companion** project leverages AI to create an interactive application designed to help users learn languages through real-time conversational practice. Using the fine-tuned Llama 3.2 model for generating contextually accurate and linguistically meaningful responses, the system seamlessly integrates speech-to-text and text-to-speech technologies to enable natural interactions. Users can communicate with the system using voice input, which is processed into text, sent to the AI model for generating a response, and then converted back to speech for a conversational experience.

The backend, developed using Python Django, handles key functionalities, including voice input processing, model communication, and audio output generation, ensuring a smooth flow of information. The React-based frontend provides a user-friendly interface for recording audio, displaying generated text responses, and playing the synthesized speech, creating an engaging and intuitive learning environment.

This project offers a personalized and interactive approach to language acquisition, making it an ideal solution for individuals, classrooms, and language education platforms. It combines advanced AI capabilities with practical tools to support learners in building vocabulary, improving pronunciation, and mastering conversational skills effectively.

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