Enhancing Speech Recognition by Designing an AI Model for Automatic Error Correction in Speech-to-Text Conversion

Abstract:

The speech-to-text auto-correction AI model presented in this project aims to enhance the accuracy of speech recognition systems by incorporating automatic error correction capabilities. Through the use of a deep learning architecture and a large labelled dataset, the model is trained to correct errors in speech recognition output. Techniques such as data augmentation, regularization, and fine-tuning are employed to improve performance. Evaluation using test datasets demonstrates significant improvements in accuracy and error reduction. The developed model can be integrated into existing systems or used independently, offering improved usability and communication across various domains. Future research directions include exploring multi-modal approaches and continual learning techniques.

Keywords: AI model, Speech recognition, Deep learning, Data augmentation, Fine Tuning.