

AI-Powered Public Speaking Training Platform

Reading Fluency Enhancement [Training Platform]

Purpose	Improve pronunciation & fluency
Sentence & Pronunciation	Uses Wikipedia, nltk & pyttsx3 TTS
Speech Recognition & Analysis	Captures, processes & evaluates speech
Fluency Assessment	Measures accuracy & speed
User Interface & Engagement	Streamlit-based interaction with real-time feedback

Emotion Recognition [Training Platform]

Purpose	Enhances expression and tone understanding.
Sentence Generation	Uses NLTK's <i>austen-emma.txt</i> dataset
Emotion & Pronunciation	TextBlob analyzes sentiment, gTTS provides speech output
Speech Recognition	Captures & processes user speech using speech_recognition
Fluency Evaluation	Assesses accuracy, speed, and clarity of speech

Findings & Recommendations:

- The AI-powered app improves fluency by analyzing pronunciation, speed, and accuracy. Users receive real-time feedback and accuracy scores, enhancing learning with engaging feedback and flexible answers.

Spark Mode -Single Word Challenge [Gamified platform]

Question Generation & Speech Processing	Uses the Datamuse API to generate synonym-based questions and captures spoken answers using speech recognition.
Answer Comparison & Scoring	Sentence-BERT evaluates response similarity, assigns scores, and provides real-time feedback.
Final Summary	Displays total score, correct answers, user responses, similarity scores.

JAM Mode [Gamified platform]

Reference Retrieval	Fetches a paragraph from Wikipedia.
Speech Recognition	Converts spoken text into written text.
Keyword Extraction	Identifies key terms using NLTK.
Similarity Analysis	Compares speech with reference using Sentence-BERT.
Feedback System	Provides insights on pronunciation, missing words, and fluency.

Findings & Recommendations:

- The AI quiz improves fluency, vocabulary, and pronunciation. Enhancing recognition, NLP, and flexible matching boosts accuracy. Interactive feedback, rewards, and personalized learning enhance user engagement.

Tamil Speech-to-Sign Language Conversion System

This project is an assistive technology solution designed to bridge the communication gap for individuals with hearing impairments. It converts spoken Tamil language into corresponding sign language representations through a structured pipeline. **Sign Language Mapping** 247 Tamil letters.