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Sign-to-Speech Technology

Team:-Futureforge

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Problem Statement

Technology Overview

Sign-to-Speech uses AI, computer vision, and NLP to convert sign language gestures into spoken words.

Real-Time Interaction

This technology enables seamless real-time communication between sign language users and speakers.

Inclusivity and Empowerment

Sign-to-Speech empowers hearing or speech-impaired individuals to engage fully in social and professional settings.

Technical Process

The system captures gestures via cameras, processes them with machine learning, and generates spoken output.

Solution

Gesture Recognition

Cameras and wearable sensors capture hand movements, facial expressions, and body posture for sign detection.

Machine Learning Interpretation

Machine learning models map recognized gestures to words or phrases in spoken language.

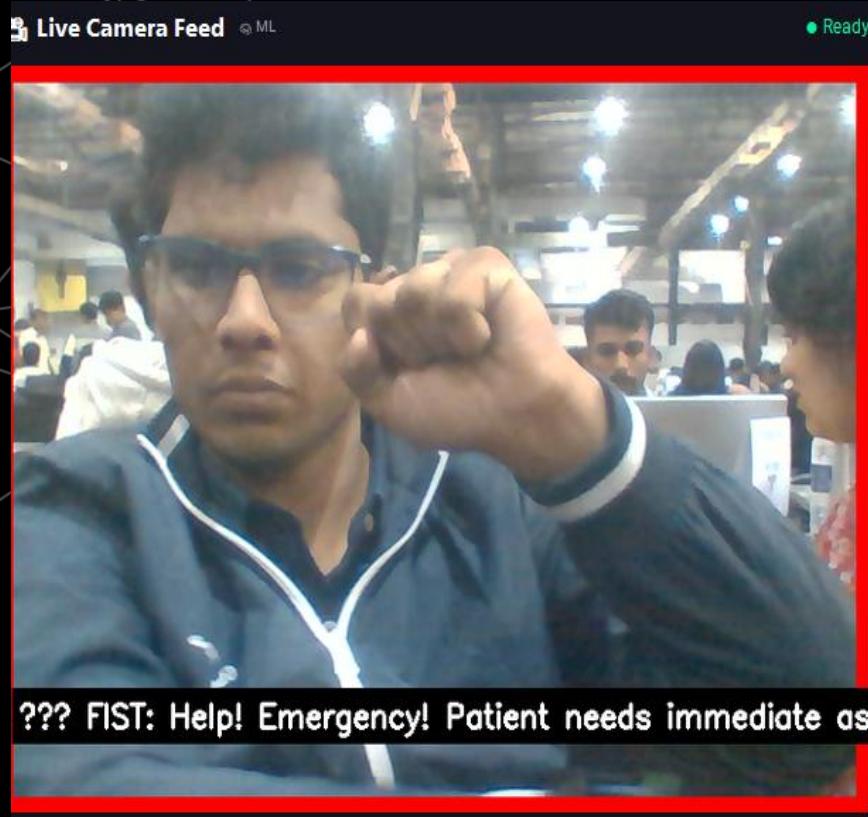
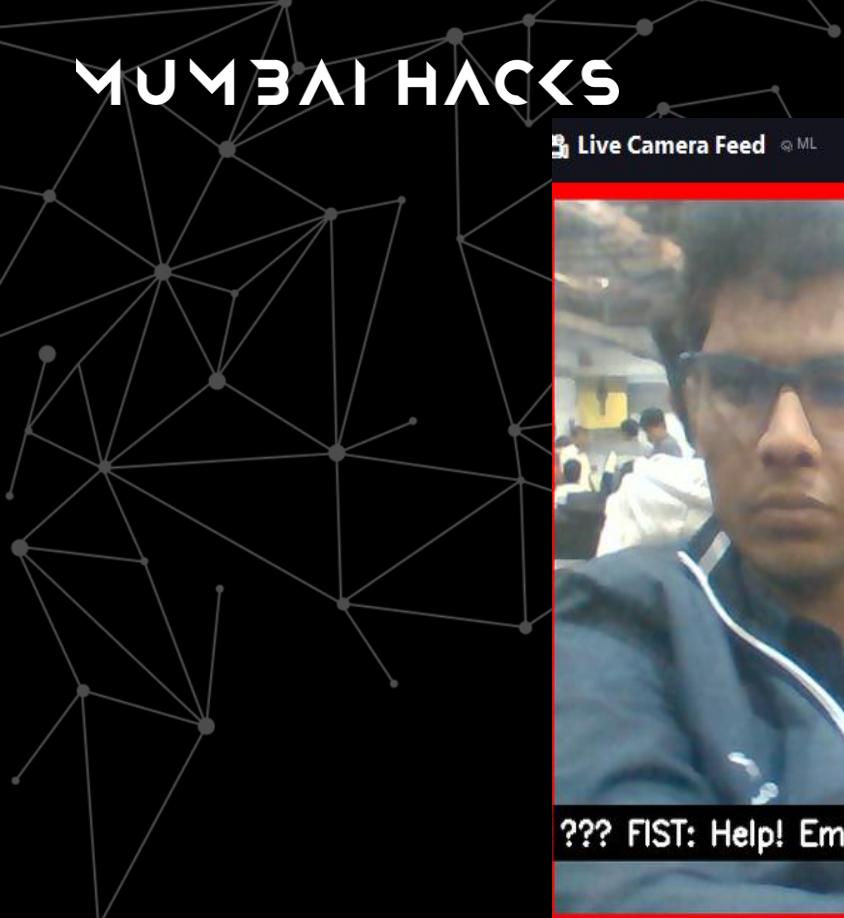
Natural Language Processing

Ensures grammatical accuracy and contextual relevance in the translated text output.

Speech Synthesis

Converts interpreted text into audible speech, completing the communication loop in real-time.

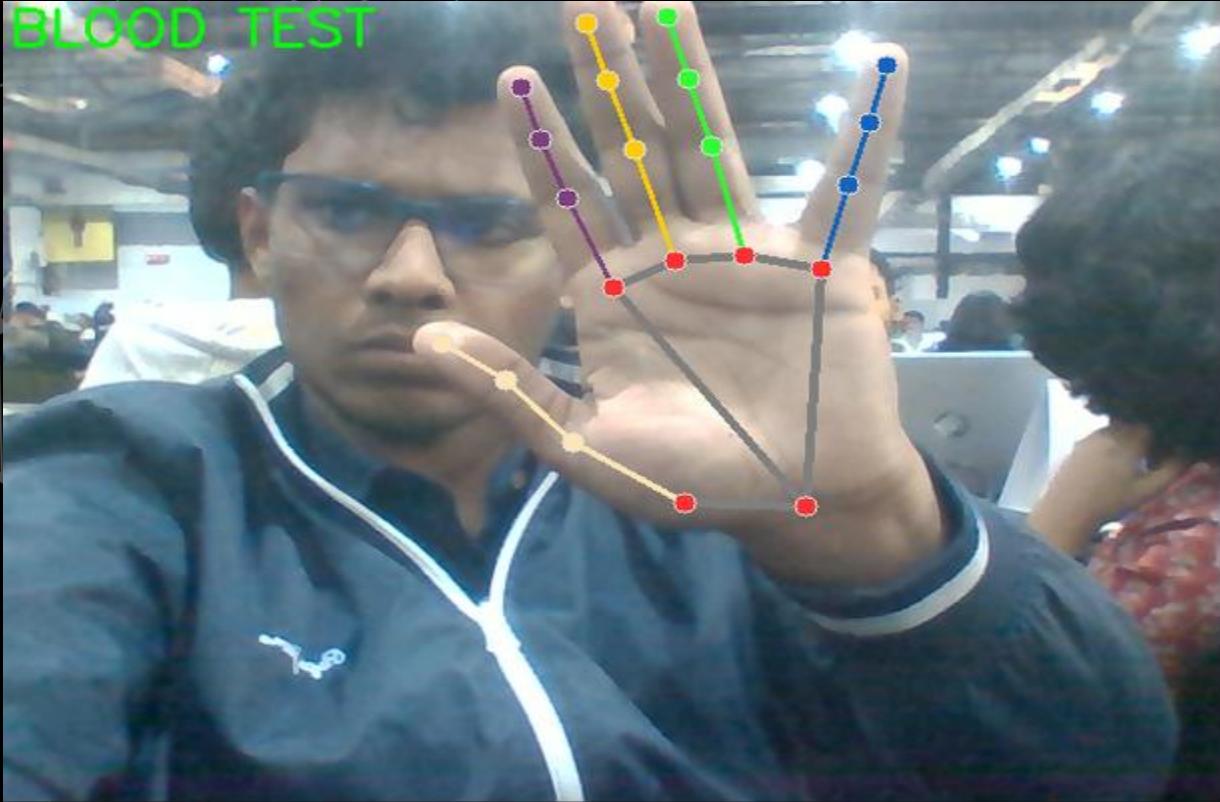
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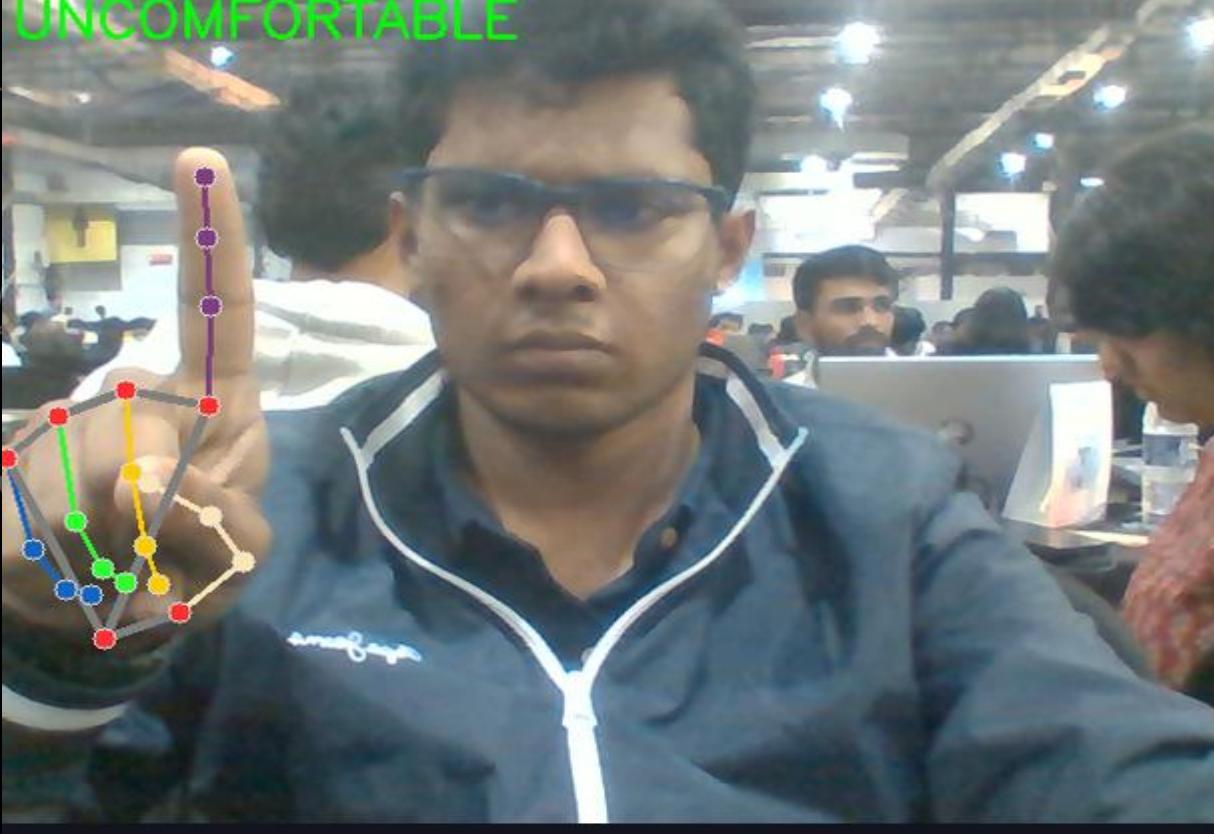
Screenshot 1

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Screenshot 2



Screenshot 3

Business Model

Revenue Streams

a) Subscription Model

₹199–₹499/month for individual users

Premium voice packs, unlimited translations, offline mode

b) Institutional Licenses

Schools / hospitals / companies: ₹20,000–₹1,50,000 per year depending on size

Training + admin dashboard included

c) API / SaaS Integration

API billed **per 1,000 translations**

Integration for EdTech apps, telemedicine, help centers

Anything else?

Immersive AR and VR Integration

Integrating Sign-to-Speech with AR and VR creates immersive, seamless communication in virtual environments.

Multilingual Sign Translation

Future systems will translate sign language into multiple spoken languages for broader global use.

Wearable Technology Advances

Smart gloves and AR glasses will enhance portability and affordability of Sign-to-Speech devices.

AI Accuracy and Adaptability

Improved AI algorithms will boost accuracy and adaptability in diverse and challenging environments.

A complex network graph composed of numerous small, semi-transparent grey dots connected by thin grey lines, forming a dense web-like pattern across the left side of the slide.

Thank you

One line about your favorite
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