

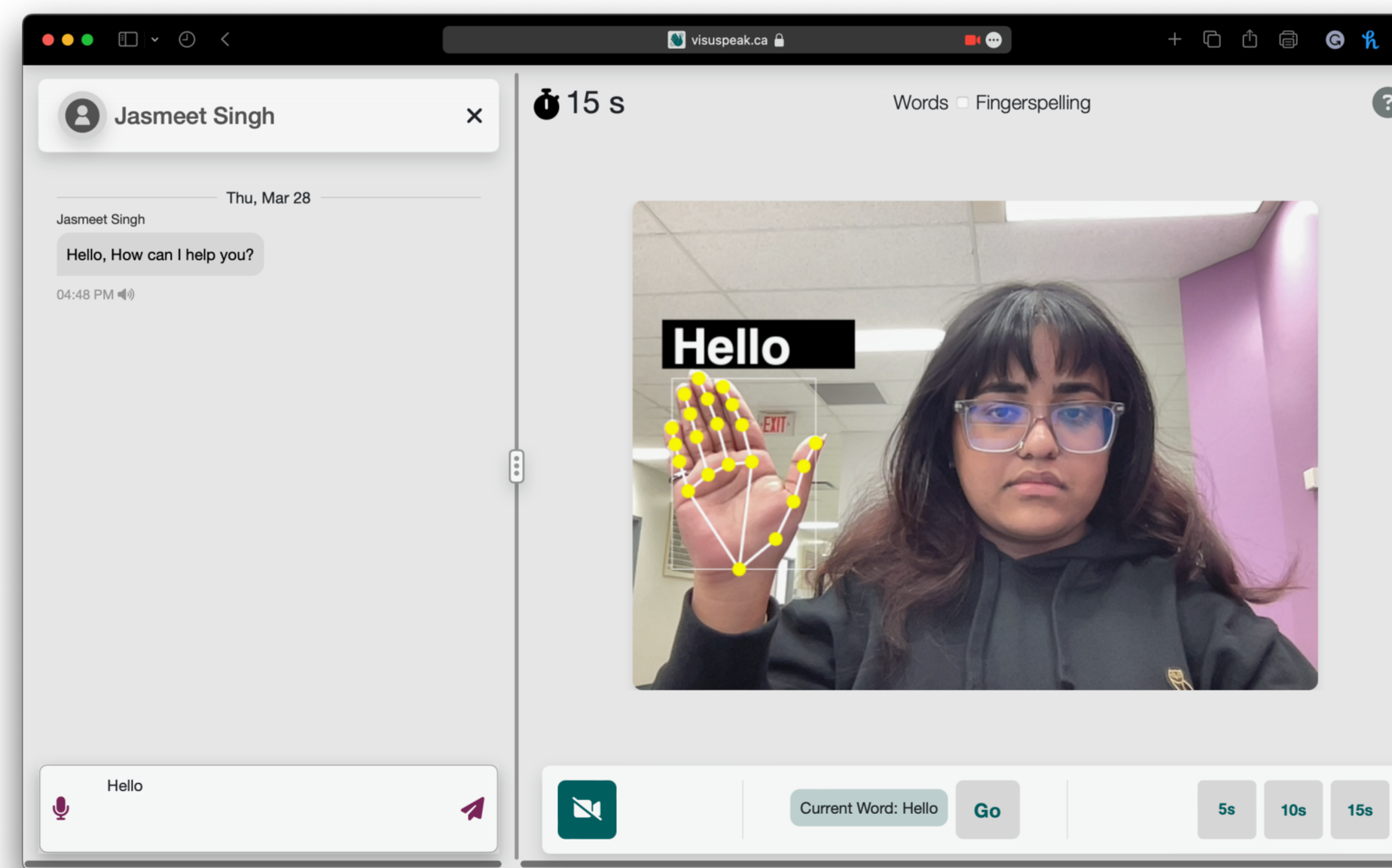
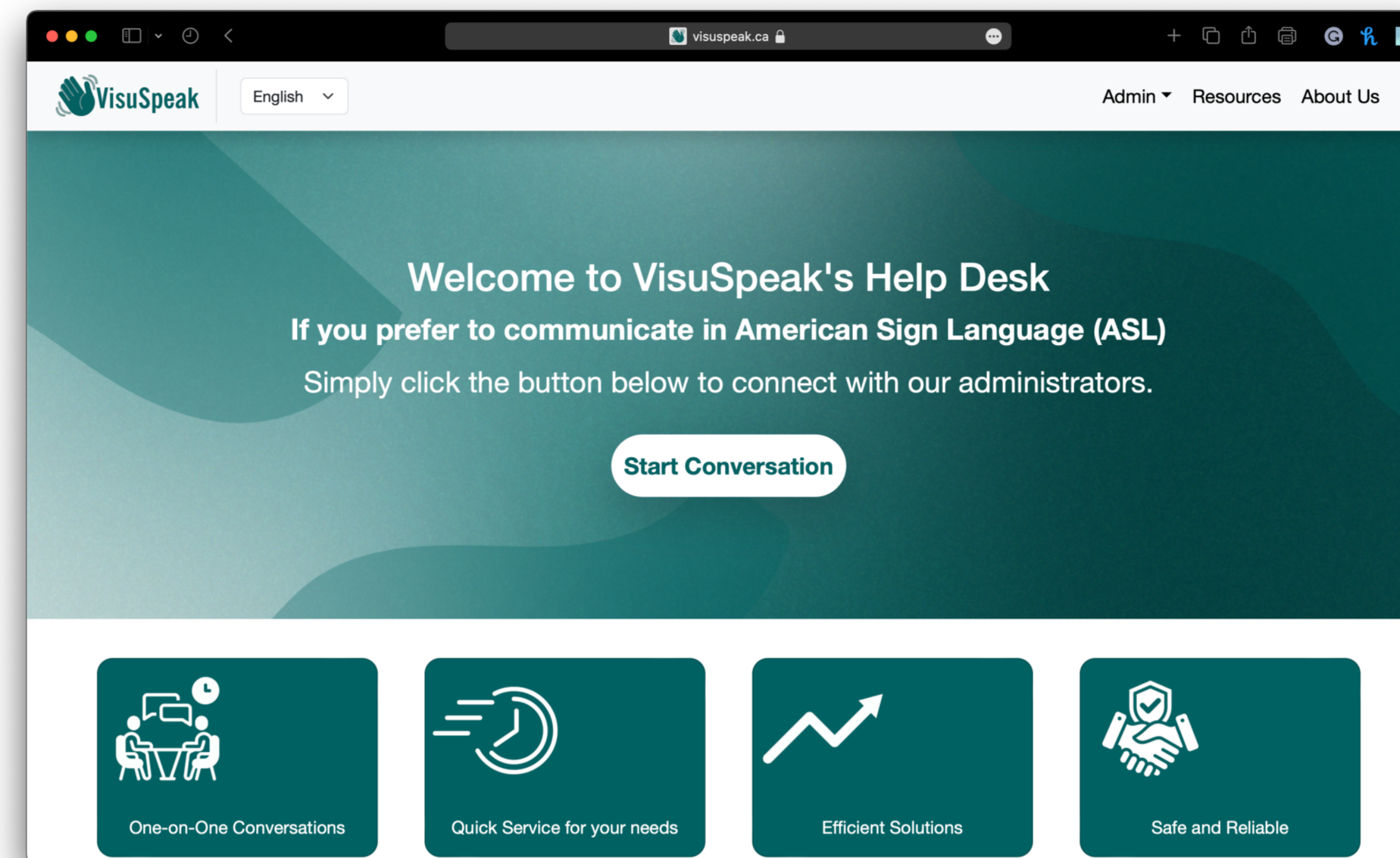
Project Overview

This project aims to create a bidirectional ASL-English translation chat application to bridge the communication gap between ASL users and English speakers, enabling real-time translation and improving accessibility.

AI-Powered ASL Communication

We have trained our AI model using American Sign Language (ASL) hand gestures with the assistance of Patricia Spicer, vocational trainer at SDHHS and native ASL speaker. We utilized over 8,500+ pictures of hand gestures representing ASL letters and selected words and phrases. Our AI model was trained using MediaPipe to ensure accuracy and robustness. It is capable of quickly detecting hand gestures and providing correct ASL translations in real-time. Additionally, our application includes a video library of resources to help users easily look up any word currently supported by our AI model and learn how to sign that word in ASL.

Checkout our App!

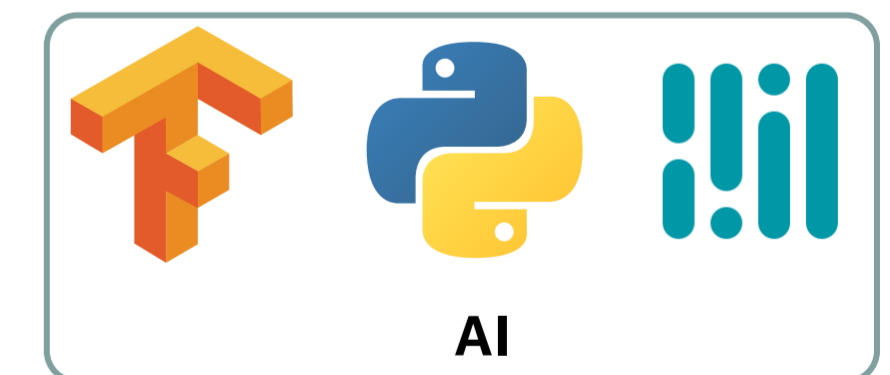
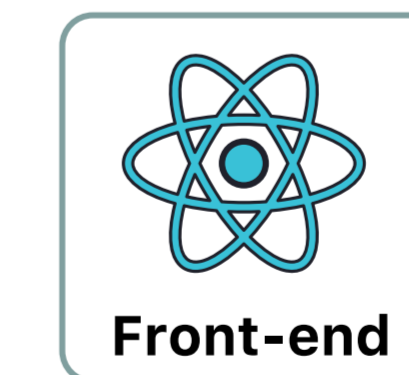


Business Need

Many people who are non-verbal or individuals with hearing loss use ASL as their language of communication. But there is often a significant gap in communication between ASL users and English speakers unfamiliar with ASL. ASL user may feel left out while seeking services in various social settings. In these situations, getting customer service can be frustrating if no interpreter or writing tools are available. Our app can translate ASL to English in real-time, promoting inclusivity.

Development Stack

Our project uses React for the front-end, Firebase for back-end operations, and AI capabilities using MediaPipe, Python, and TensorFlow. By seamlessly integrating these technologies, we strive to deliver a user-centric experience that is both intuitive and intelligent.



Team Members



Archisha Bhattacharya
AI Developer, Full-Stack Developer & Technical Architect



Jasmeet Singh
AI Developer, Full-Stack Developer & UI/UX Developer



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Documentation & GitHub Manager, Front-end Developer

Acknowledgements

- **Dr. Timothy Maciag** - Capstone Facilitator
- **Dr. Kin-Choong Yow, Ph.D., P.Eng, SMIEEE, MACM** - Project Mentor
- **Robert Anderson, P.ENG** - Manager, Innovative Solutions & Mobility at SaskPower
- **Patricia Spicer** - Vocational Worker, Early Childhood & Family Services at SDHHS
- **Jasmine Owens** - Accessibility Officer, Student Wellness Centre at University of Regina

