

Name of the Organization: ROCHIRAM T. THADHANI HIGH SCHOOL FOR HEARING HANDICAPPED

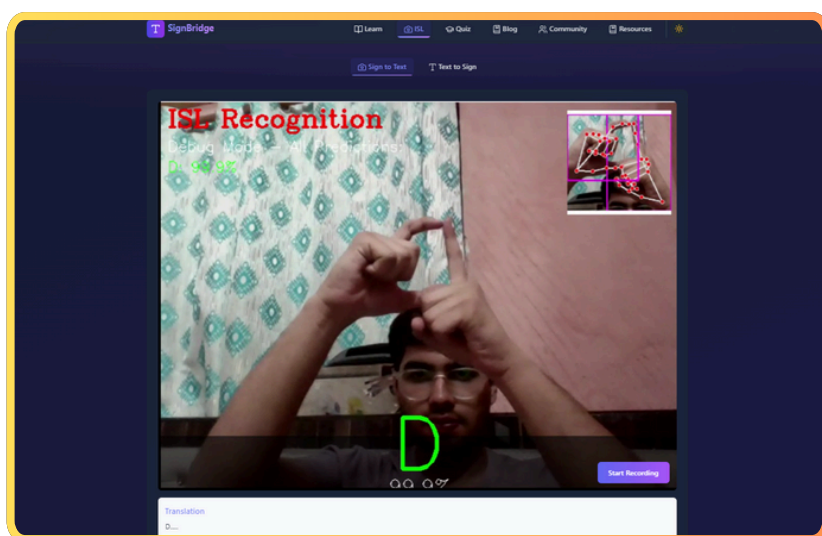
BRIDGING THE GAP: OUR JOURNEY INTO SIGN LANGUAGE AND INCLUSIVITY

Our project is dedicated to overcoming communication barriers for India's deaf community by delivering two distinct yet complementary solutions: a real-time Sign-to-Text translation system and a Text-to-Sign conversion tool. In the Sign-to-Text module, our AI-powered system employs real-time hand landmark detection using OpenCV, cvzone's HandDetector, and MediaPipe, combined with a Convolutional Neural Network enhanced with L2 regularization and data augmentation techniques, to accurately interpret ISL gestures into text. In parallel, the Text-to-Sign module converts written text into coherent ISL video sequences by tokenizing input text and employing a FAISS-based similarity search to retrieve and stitch together pre-recorded sign language video clips using moviepy for seamless stitching. Together, these approaches empower deaf individuals, promote inclusive education, and contribute to reducing inequalities by bridging communication gaps in line with the Sustainable Development Goals.



Group no. 10

Domain: AI, Deep Learning and DWM

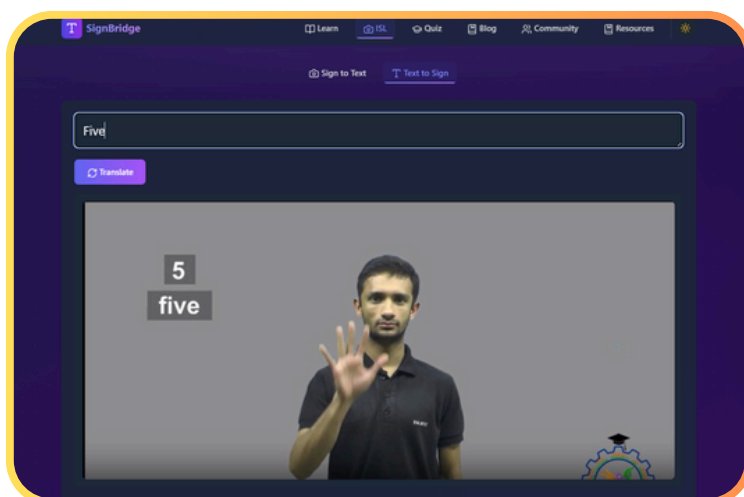


Team Members Name

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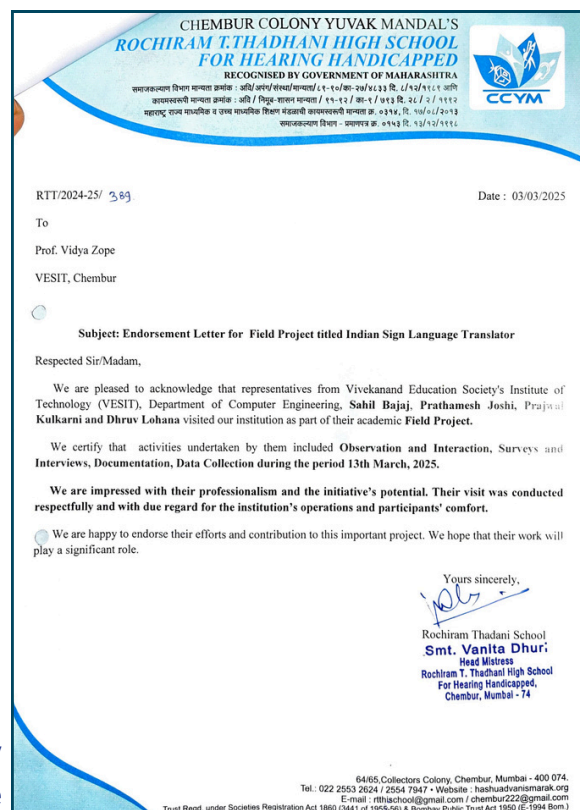
Proposed Solution



Tools Used: React.js, Flask, MongoDB, OpenCV
MediaPipe, MobileNetV2-pred ImageNet for ISL feature
extraction, SentenceTransformer, FAISS

Github

Video Link



Endorsement Letter