

# SmartSign — Real-Time Sign Language Translator

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■ **INTRODUCTION:** SmartSign is a deep learning-based system that converts live sign language into readable text and speech. It uses computer vision and temporal models to help bridge communication between signers and non-signers in real-time.

■ **STEP-BY-STEP: How to Build** 1■■ Capture video using webcam. 2■■ Extract hand & pose keypoints using MediaPipe. 3■■ Normalize and preprocess keypoints. 4■■ Train deep model (LSTM / Transformer) for sign recognition. 5■■ Convert output to text & add Text-to-Speech (TTS). 6■■ Deploy model using TensorRT/TFLite for real-time use. 7■■ Build simple UI to show translation on screen.

■ **CONCLUSION:** SmartSign enables accessible communication for the deaf and hearing-impaired community. It demonstrates how AI can enhance inclusion through real-time translation and continuous learning.