

SIGN LANGUAGE DETECTION IMPLANTATION USING MEDIA PIPE FRAMEWORK FOR ENHANCED PERFORMANCE

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ABSTRACT

This project explores the development and implementation of a Sign Language Detection system using machine learning (ML) models. The aim is to create an efficient and accurate tool for interpreting sign language gestures, enhancing communication accessibility for individuals with hearing impairments.

The proposed methodology involves capturing video or image frames of sign language gestures through a camera. Relevant features, such as hand movements and positions, are extracted and utilized as input for a machine learning model. The ML model, trained on a diverse and representative dataset of sign language gestures, employs classification algorithms to recognize and interpret these visual cues.

Efforts are made to optimize the ML model for real-time processing, ensuring prompt and seamless communication. Various ML architectures, mainly ANN, Mediapipe, tensorflow, openCV are explored to find the most suitable approach for sign language detection.

The system's performance is rigorously evaluated using a comprehensive dataset encompassing various sign languages, gestures, and environmental conditions. Results demonstrate the robustness and accuracy of the ML model, showcasing its potential for widespread adoption in real-world applications. The proposed Sign Language Detection system holds promise for improving communication accessibility and fostering inclusivity in diverse settings

KEYWORDS: Sign Language Detection

Article History

Received: 20 Jan 2025 | Revised: 21 Jan 2025 | Accepted: 24 Jan 2025
