GESTURE RECOGNITION AND AUDIO CONVERSION TOOL FOR THE VISUALLY IMPAIRED

PROBLEM STATEMENT

Deaf and visually impaired students encounter academic challenges due to a lack of online curriculum in their regional language. They rely on lip reading and sign language, needing video–based teaching materials that combine both. They seek a single platform offering educational content with sign language, accurate lip movement, and captions to facilitate learning. This unified approach will enhance their accessibility to education, ensuring a comprehensive learning experience for these students.

TEAM MEMBERS

Syeda Malkan Mehraj, CSE

Siri, CSE
Shruthi K V, CSE

SOLUTION

The concept involves translating gestures using sensors and transforming them into audible output. These gloves interpret specific gestures into text and speech by leveraging Arduino as the system's core. Integrated flex sensors detect gestures, converting them into resistance signals. These signals are then processed by an Arduino Nano, converting the resistance into both text and sound outputs. This innovative setup enables the translation of hand gestures into comprehensible text and speech, enhancing communication accessibility.