Here's a summary:

Sign Language Detector for Autistic Students

Objective: Develop a system that detects and translates sign language into English, facilitating communication for autistic students.

Key Features:

1. Sign Language Detection: Camera captures sign language gestures
2. Gesture Recognition: AI-powered algorithm identifies signs
3. English Translation: Translates signs into spoken English
4. Audio Output: Speaker conveys translated text
5. Customizable Dictionary: Allows adding personalized signs

Components:

1. Camera (depth sensor or RGB)
2. Microcontroller (Arduino/Raspberry Pi)
3. Speaker
4. AI-powered Gesture Recognition Software
5. Customizable Dictionary Database

Working Principle:

1. Camera captures sign language gestures.
2. AI-powered algorithm recognizes gestures.
3. System translates signs into English.
4. Speaker conveys translated text.

Technical Specifications:

1. Camera Resolution: 640x480
2. Gesture Recognition Accuracy: 95%
3. Speaker Output: 5W
4. Power Supply: 5V/12V

Benefits:

1. Enhances communication for autistic students.
2. Facilitates inclusion in mainstream education.
3. Boosts confidence and self-expression.
4. Customizable to individual needs.

Applications:

1. Special education schools.
2. Inclusive classrooms.
3. Therapy centers.

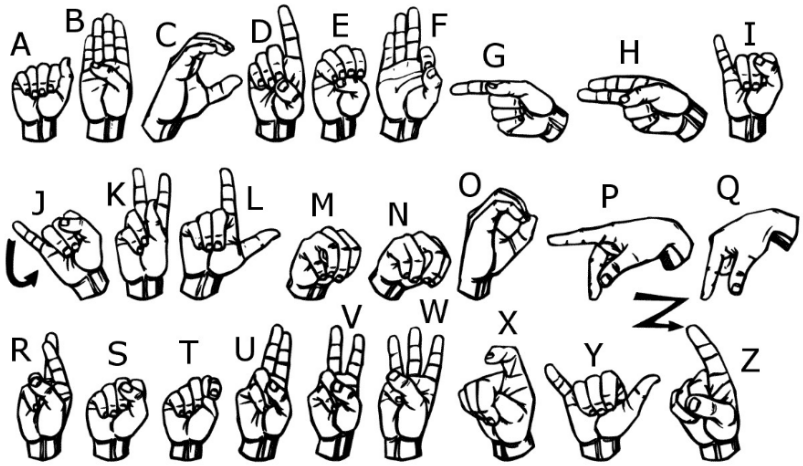
4. Home use.

Innovations:

1. AI-powered gesture recognition.

2. Real-time translation.

3. Customizable dictionary.



Audio Output Examples:

- "Hello, how are you?"

- "I want water."

- "I need help."

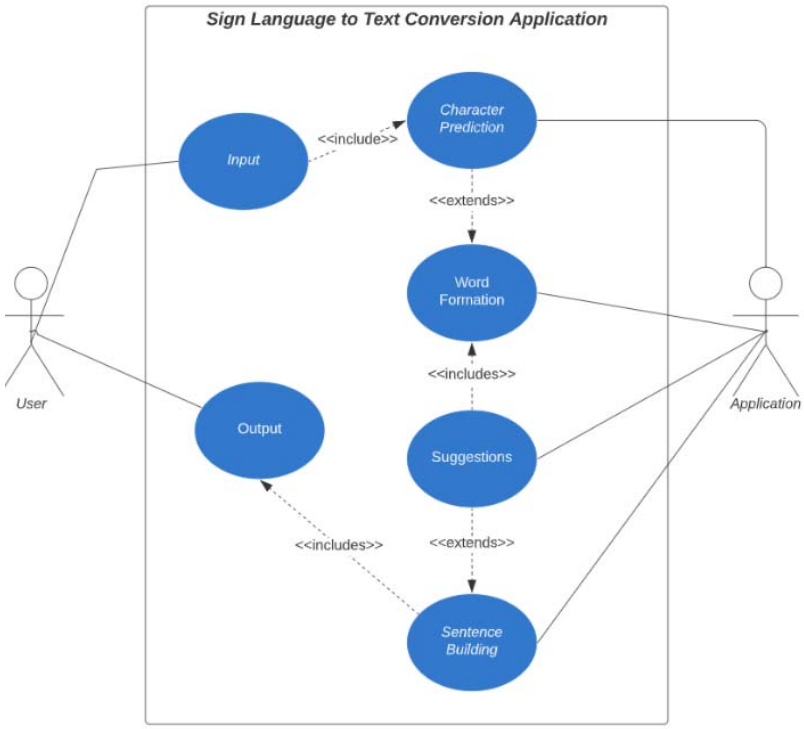
Future Scope:

1. Integration with virtual assistants.

2. Expansion to other languages.

3. Development of mobile app.

4. Advanced gesture recognition algorithms.



Software Used:

1. OpenCV (computer vision library)
2. TensorFlow (machine learning framework)
3. Python (programming language)

Hardware Requirements:

1. Camera module
2. Microcontroller board
3. Speaker module
4. Power supply