Sign Language Detection using Deep Learning

Project Description

This project utilizes deep learning and computer vision techniques to detect and recognize American Sign Language (ASL) gestures in real time using a webcam. The model is trained on a high-quality dataset of hand gestures, processed using Convolutional Neural Networks (CNN).

Features

- Real-time sign language detection via webcam
- CNN-based deep learning model for gesture recognition
- High accuracy with a well-trained dataset
- User-friendly interface using OpenCV
- Supports various ASL gestures

Installation

1. Clone the repository:

   ```bash
   git clone https://github.com/your-username/sign-language-detection.git
   cd sign-language-detection
   ```

2. Install dependencies:

   ```bash
   pip install -r requirements.txt
   ```

3. Run the project:

   ```bash
   python sign_detection.py
   ```

```

**Usage**

- Ensure your webcam is connected.

- Run the script, and it will start detecting ASL signs.

- Press 'q' to exit.

**Future Improvements**

- Expand dataset for improved accuracy.

- Implement multi-hand gesture recognition.

- Develop a full-fledged application with voice output.
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