Signify

Course: CSE422 ; Artificial Intelligence Lab

Presented By:

MU_Joyoddhoni

Shahadat Hossain

ID : 191-115-098

Nafisa Nusrat Tanha

ID : 191-115-101

B.Sc in Computer Science & Engineering

Batch : 47(C)

Presented To:

Manal Aymaan

Lecturer

Department OF Computer Science & Engineering

Metropolitan University

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Signify (Sign Language Detection)

Overview:

The Idea Of "Signify" A Sign Language Detection Using Image Processing. In this project, we present a technique to detect Bangladeshi Sign Language (ASL) from images that performs in real time.

Objective :

❑The Objective Of This Project Is To Identify The Symbolic Expression Through Images So That The Communication Gap Between A Normal And Hearing Impaired Person Can Be Easily Bridged.

❑To Develop An Automatic Sign Language Detection System With The Help Of Image Processing And Computer Vision Techniques.

❑Communication Is Always Having A Great Impact In Every Domain And How It Is Considered The Meaning Of The Thoughts And Expressions That Attract The Researchers To Bridge This Gap For Every Living Being.

❑To Provide A Real Time User Interface So That Signers Can Easily And Quickly Communicate With Non-Signers.

❑To Efficiently And Accurately Recognize Signed Words, From Bangladeshi Sign Language, Using A Minimal Number Of Training Examples.

Device : Webcam is used for the object detection.

Project Features :

- ❖ Detecting Sign Language From Human Pose Estimation.
- ❖ Labeling New Images.
- ❖ Train Images For Sign Language.

- ❖ Real Time Sign Language Recognition Using Image Processing.
- ❖ Hand Gesture Recognition For Sign Language.
- ❖ Finger Detection For Sign Language Recognition.
- ❖ OpenCV For Faster Image Processing.
- ❖ Use of TensorFlow give flexibility and control with feature.

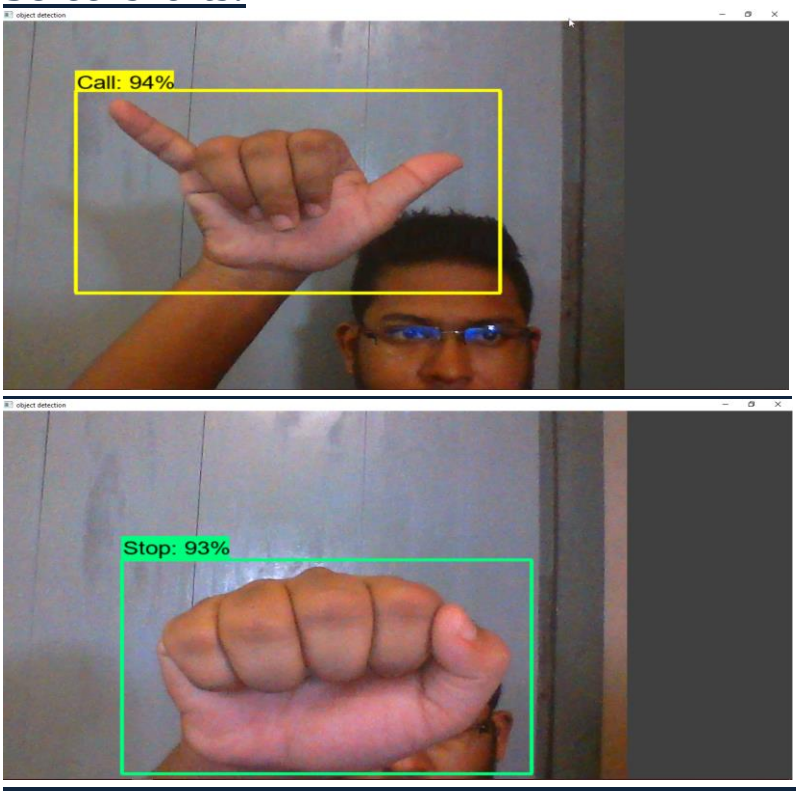
Technologies:

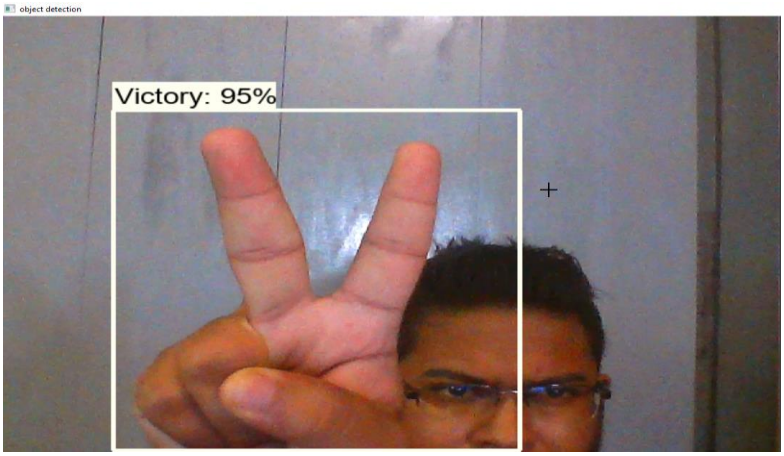
- ❖ Python
- ❖ TensorFlow
- ❖ OpenCV

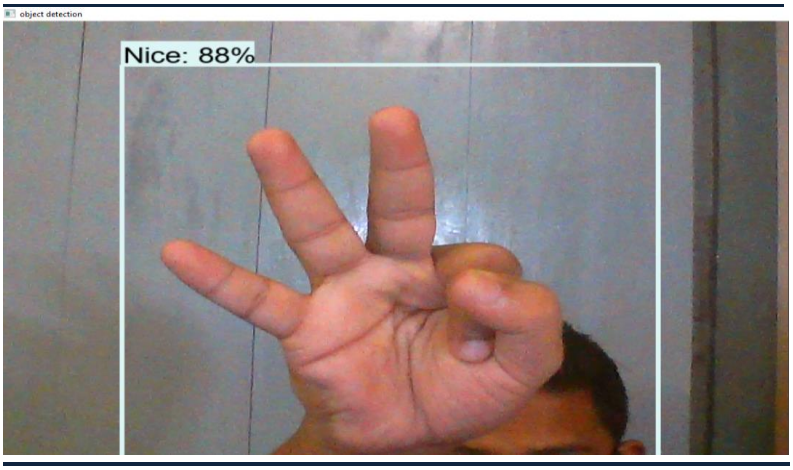
How It Works:

We built our project using a real time sign language detection model using Python, OpenCV and Tensorflow Object Detection.

Screenshorts:







Application: This project can be of great use in the future in fields like Robotics , Artificial Intelligent , Controlling the computer through hand gestures etc.

Limitations: This project can recognize only 5 words. It cannot recognize all the signs. Also this project didn't detect any alphabets , numbers etc.

Future Work:

Future work will be extended for further improvement in recognition accuracy and also for movement detection of hand for word recognition. We will try to detect alphabets , numbers also