KAFRELSHEIKH STUDENT BRANCH
IEEE
ADVANCING TECHNOLOGY FOR HUMANITY

Pixel project

Our Team

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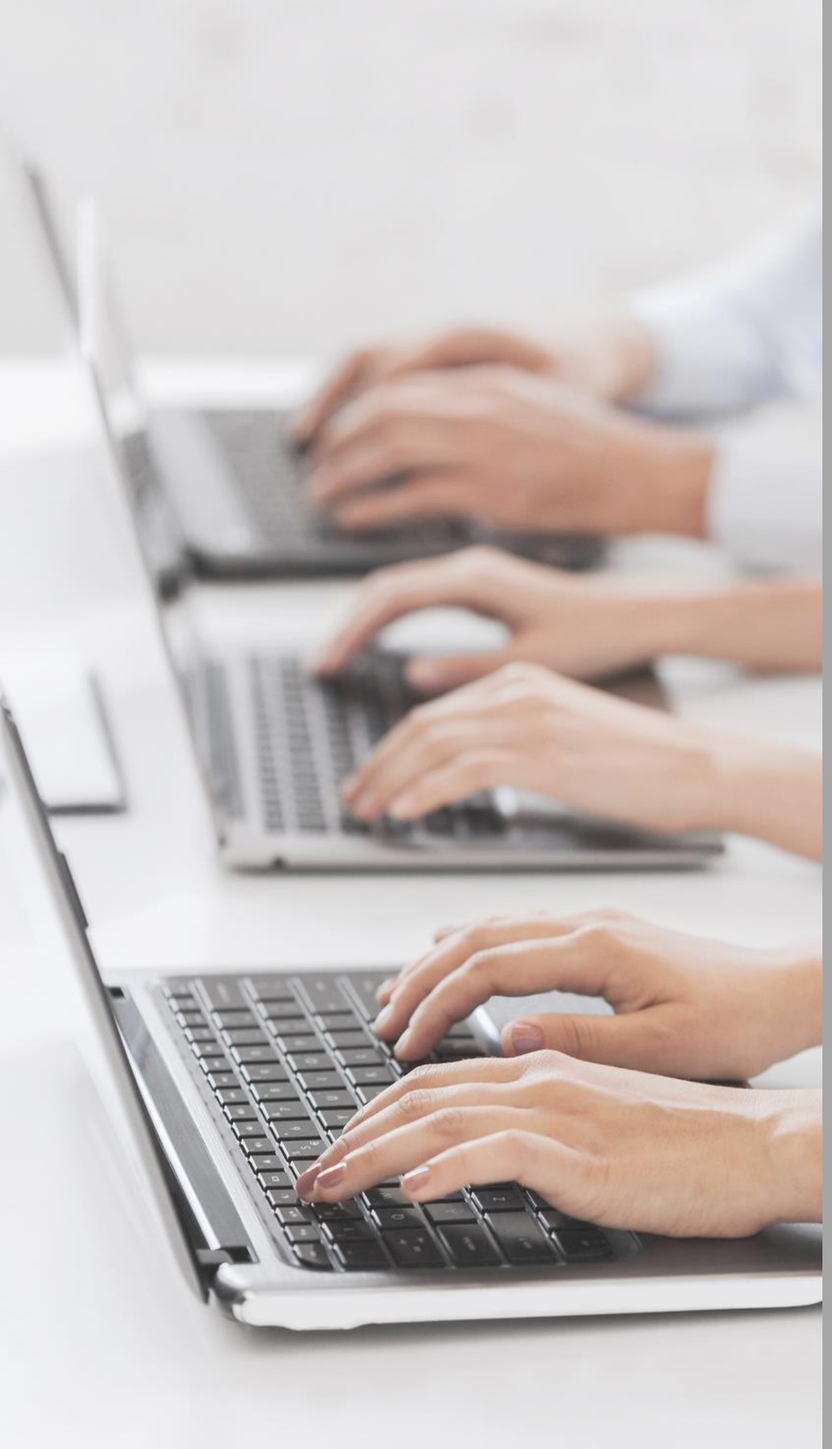


Project features and overview

The project features a graphical user interface with four buttons, each serving a specific purpose to enhance user interaction.

- **Face Detection:** Utilizes computer vision algorithms to identify and locate human faces in images or live video streams, applicable in security systems and human-computer interaction.
- **Color Detection:** Employs computer vision techniques to identify and analyze colors within images or videos, useful in image processing, quality control, and assisting color-related visual impairments.
- **Volume Control:** Dedicated button for adjusting audio output levels, providing convenient volume management in multimedia applications.
- **Virtual Keyboard:** Introduces a virtual keyboard for text input, offering an accessible alternative to physical keyboards in diverse scenarios.

Libraries and Dataset

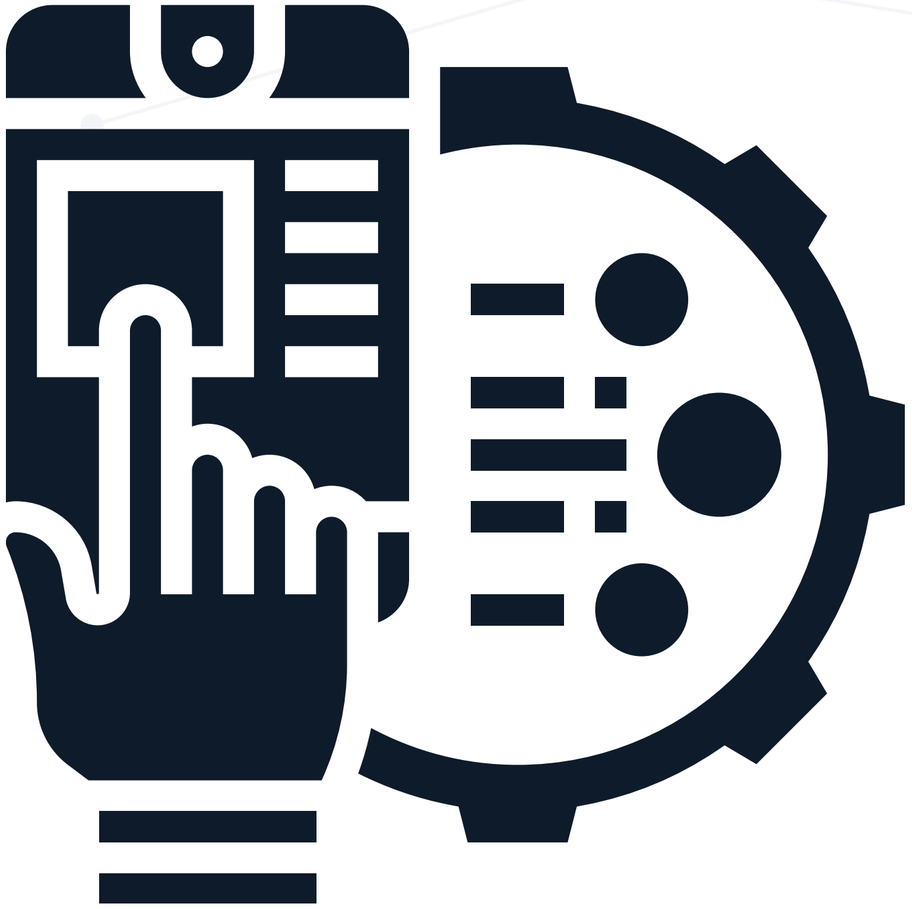
Libraries

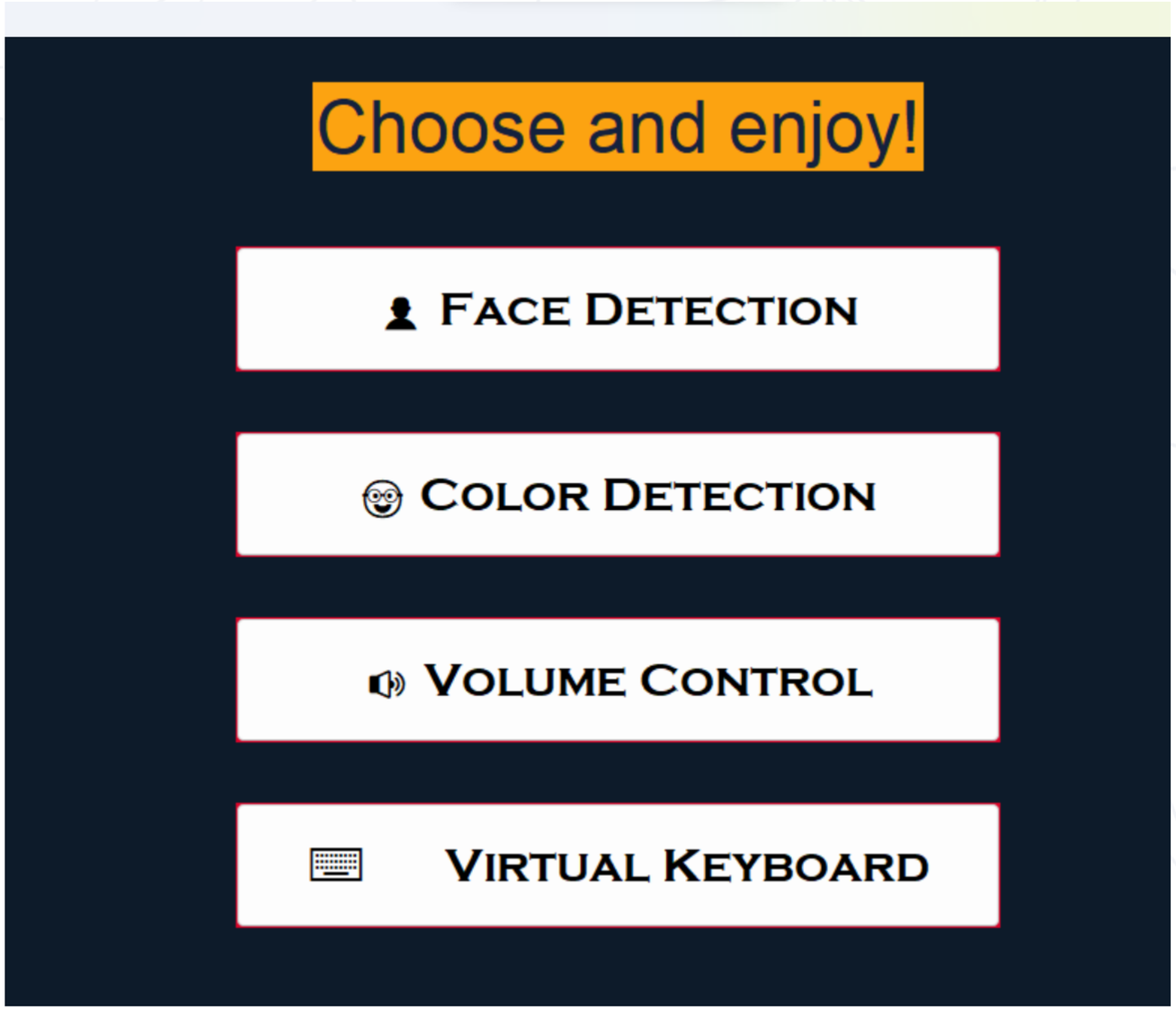
- cv2
- Numpy
- mediapipe
- cvzone
- pandas
- math
- ctypes
- tkinter

Dataset

The dataset includes color gradients with corresponding color names, represented in both hexadecimal and RGB formats. This data is utilized for accurate color identification and application in image processing, ensuring precise handling of colors within images.

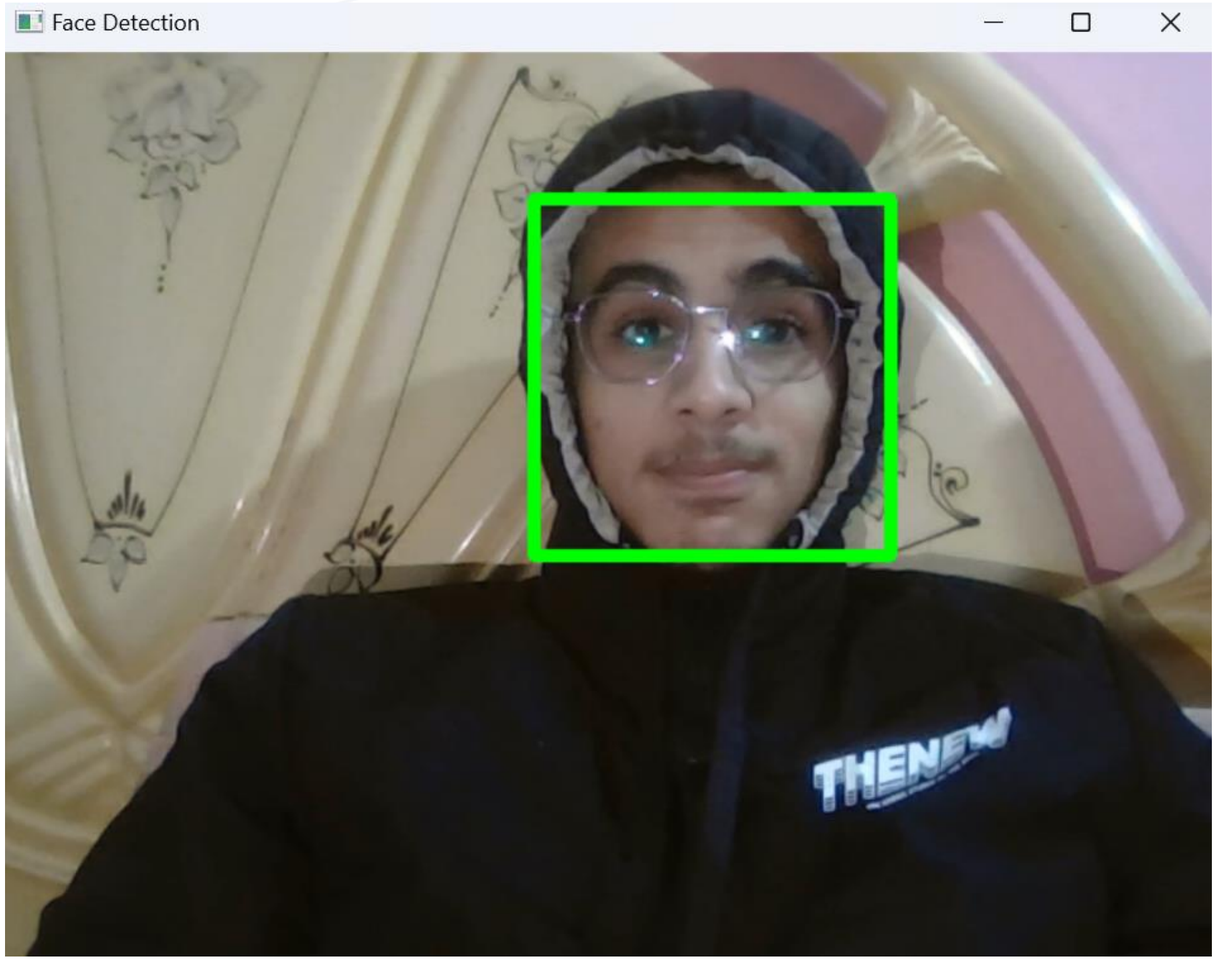
GUI



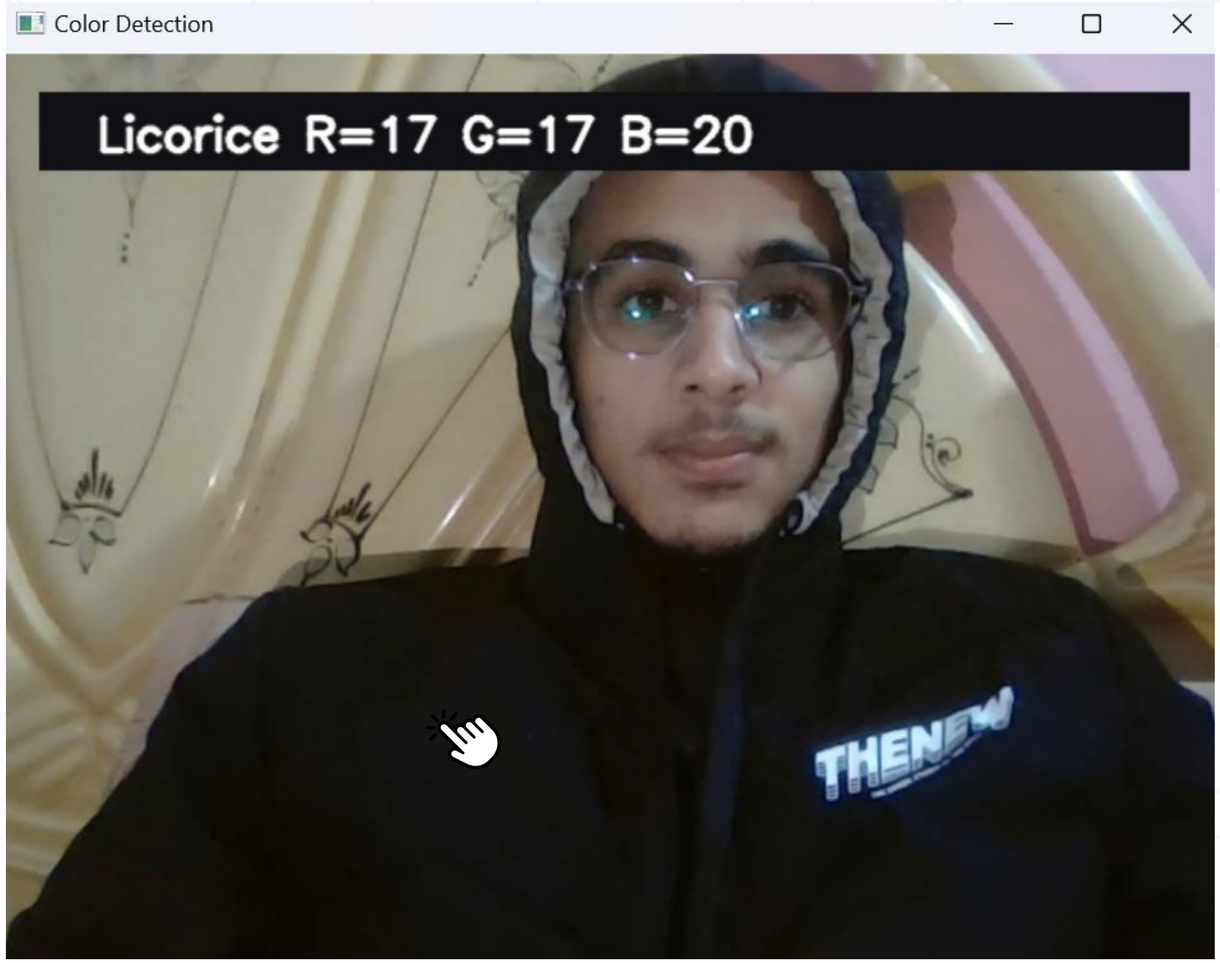

Choose and enjoy!
FACE DETECTION
COLOR DETECTION
VOLUME CONTROL
VIRTUAL KEYBOARD

Results

Face detection

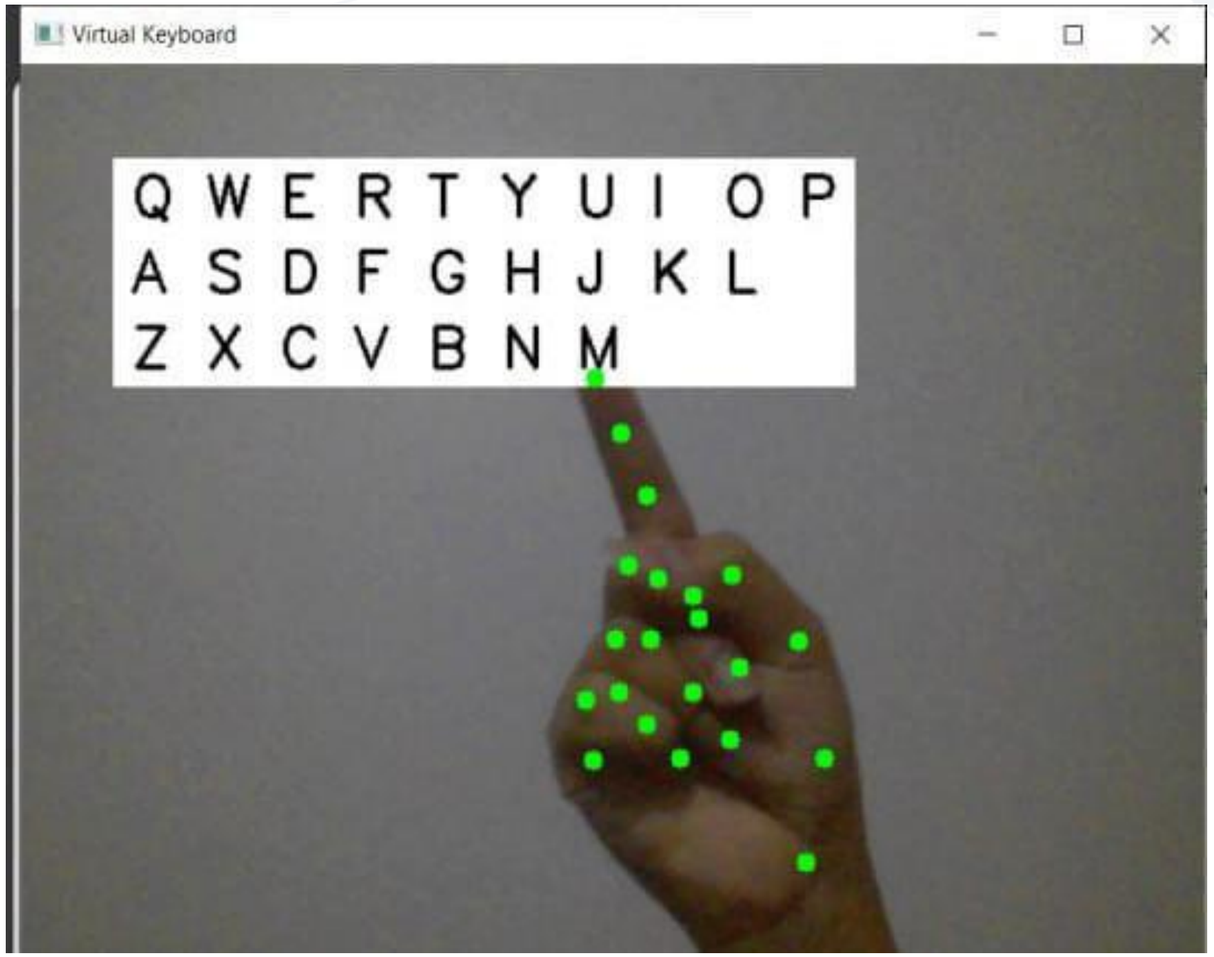


Color detection

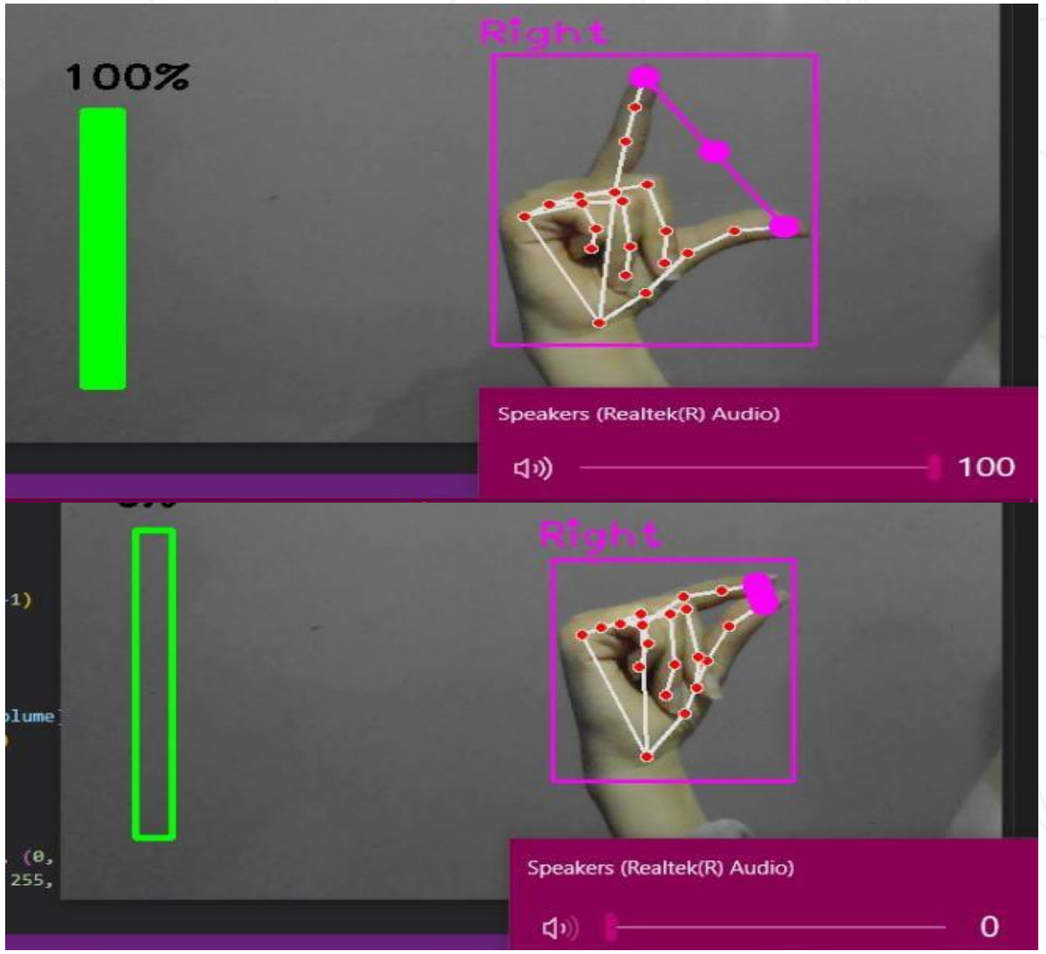


Results

Virtual Keyboard



Volume Control



Open the project on GitHub

Thank you!