Introduction

I developed an attendance system for workplace workers using facial recognition using this github repo as inspiration. The project uses OpenCV for image processing and NumPy for efficient computations.

Methodology

Dataset: The system is trained on 50 images(can be changed though 50 is ideal) of each worker taken instantly during registration which saves the photo along with Enrollment ID and name.

Model Implementation

- OpenCV is used for facial detection and recognition.
- NumPy is utilized for handling and processing image data efficiently.
- OpenCV-contrib-python enhances the system with additional algorithms for better accuracy.
- Pandas and OpenPyXL are used to store and manage attendance records in spreadsheets.
- Pillow processes image files for optimal performance.
- Pyttsx3 provides voice feedback for worker identification and status updates.

Results and Challenges

Results

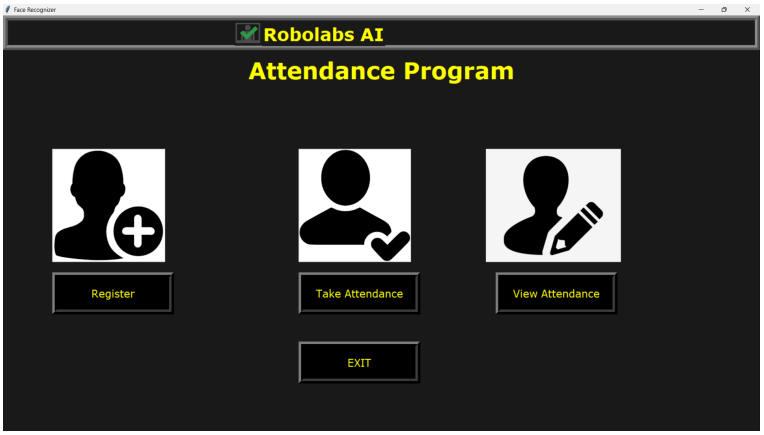
- The system accurately detects and recognizes workers based on their facial features.
- Attendance logs are automatically updated in an Excel file for each department of the workplace. The department name is asked during the process of taking attendance.
- The system provides voice confirmation upon successful recognition.

Challenges

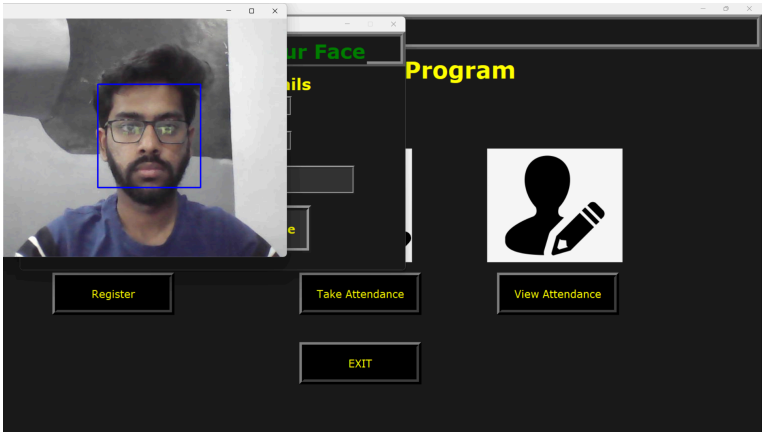
- Low-light conditions and other such obstacles affect facial recognition accuracy.
- Real-time processing requires optimization for large-scale uses.

Training image example:

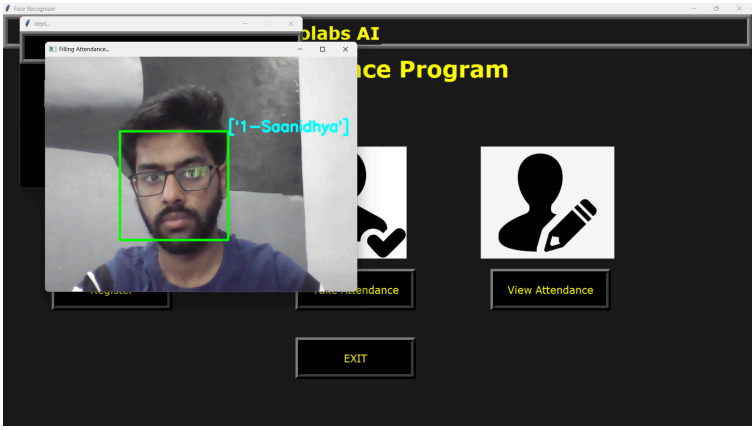
Interface:



Registration:



Taking Attendance:



Attendance list: