Face Recognition System using Advance Security systems

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Abstract

Facial recognition and detection have become an essential part of modern security systems. With the advent of machine learning techniques, it is now possible to train a model that can accurately detect and identify a person's face.

In this project, we've developed a facial recognition and detection system that uses machine learning to identify the authentic person. The system captures the person's face, compares it with the database of authentic faces, and sounds a warning if the person is not recognized. A 10-second video & images are captured and send to the owner for further analysis. If the person is authentic, the system allows entry and greets the person. **Our system adds an extra layer of protection to modern face recognition systems.**

Discussion

Facial recognition and detection technology uses machine learning algorithms to identify and verify a person's identity by analyzing their facial features. The system compares the person's image with a database of pre-existing images to determine if the person is authentic.

In our facial recognition and detection system, we have used machine learning to train the model on our data. The model identifies the facial features of a person and creates a unique facial profile that is then used for identification purposes.

The system works by capturing the image of the person's face and comparing it with the database of authentic faces. If the person is not recognized as an authentic person, the system will sound an alarm and send a video of the person to the owner for further analysis. On the other hand, if the person is recognized as an authentic person, the system will allow the person to enter and greet them by saying, "**Welcome**."

In the image below, we have depicted the working of our facial recognition and detection system. The system captures the person's face using a camera, processes the image, and compares it with the database of authentic faces. If the person is recognized, the system allows entry, and if not, an alarm is sounded which says "**Get Away from Here**". Also an **email will be sent** to owner that someone is trying to intrude in the place **with videos and images** of the intruder.

Our facial recognition and detection system offers an added layer of security to modern security systems, making it an ideal choice for organizations that prioritize security.
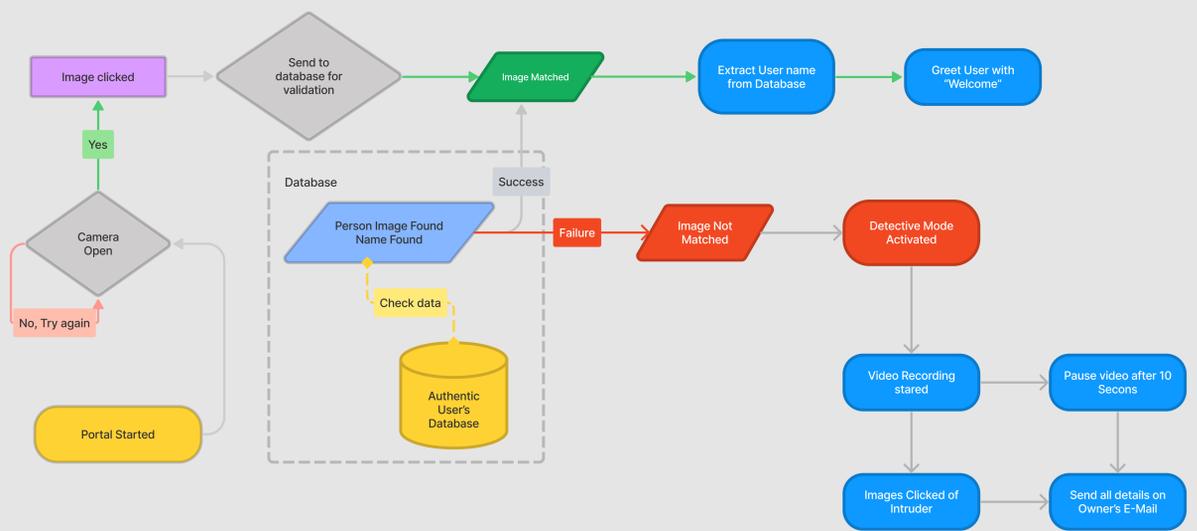
Objective

1. To develop a facial recognition and detection system that accurately identifies and verifies the identity of a person using machine learning algorithms.
2. To incorporate an added layer of security into the system that sounds an alarm and sends a video to the owner if the person is not recognized as authentic.

References

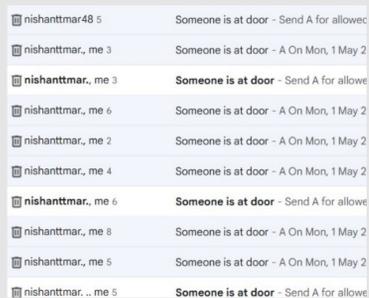https://www.researchgate.net/figure/Facial-recognition-attendance-system-research-workflow_fig1_348914536
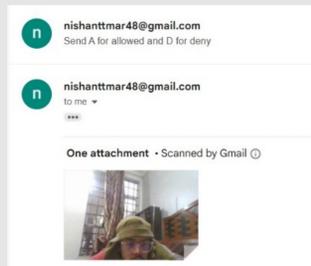
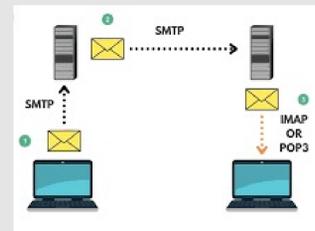## Working Model Flow

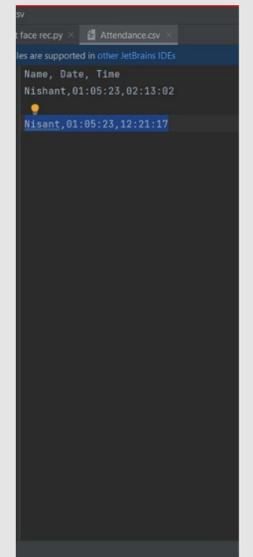## Results (Working Snapshots)

Authentic Person Image

Mail which has been sent to Owner

Mail Containing image of intruder

SMTP Email Sending Protocol

Authentic Person Login Details