

CMPE 491

Project: Face Guard

Web Page:

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Description

Face Guard is a modern technology that helps to increase security standards. Its main job is to recognize faces, and as a result of it, entrances to the university will be easier, more efficient, and more secure. It will decrease human power and increase reliability. Instead of entering the university with a card, students' and staff's face will be recognized with Face Guard, thus, foreigners will not be able to enter the university without permission. It has four major functions, these are: scanning, recognizing, identifying, and authenticating faces.

1. Scan Face: When someone looks into the camera, the camera recognizes a face in an image (it can take a picture) or video stream.
2. Recognize Face: The software searches the detected face from the database.
3. Identify Face: The software identifies the person whose face has been recognized.
4. Authenticate Face: If the program can match the faces, the gate will open; otherwise, it won't. The software compares the detected face with the face in the database.

Constraints

In this project, there are a couple of limitations such as budget constraints, time constraints, and legal requirements. If it is decided to buy a kit to use in our system, it will constrain our budget as group members but as a solution IT's support has been demanded since this system will be used at our university. It's a big project, thus the time must have been managed well. Since this project uses some personal information, privacy might be one of the biggest problems but again Communication was also established with IT on this issue.

Professional and Ethical Issues

Face Recognition System is among the biometric data. Biometric data is defined as "personal data of special nature" in Article 6 of the Personal Data Protection Law, therefore it is essential for getting students and staffs permission to access their personal information.

Functional Requirements:

- The software must be able to capture and process facial images from the camera on the school campus.
- The software must be able to match the captured facial images with stored user profiles in the system.
- The system must be able to accurately identify individuals, with minimal false positives or false negatives.
- The system must provide access control by allowing authorized users to access specific areas of the campus.
- The software must be able to update user profiles as necessary.

Non-Functional Requirements:

- Accuracy: The system must have a high level of accuracy in identifying individuals, with an accuracy rate of at least 95%.
- Speed: The software must be able to process facial images and match them with stored profiles in under 2 seconds.
- Scalability: The system must be able to handle a high volume of traffic and be scalable to accommodate future expansion.
- Security: The system must be designed with security in mind, with data encryption and protection against unauthorized access.
- Usability: The system must have a user-friendly interface that is easy to use and navigate for both administrators and users.
- Reliability: The system must be highly reliable, with a system uptime of at least 99.9%.

By ensuring that the functional and non-functional requirements are met, the faceguard will provide a reliable, accurate, and efficient system for campus security and access control.