**Artificial Intelligence And Machine Learning(AIML)-Project**

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**Problem Statement:** AI-Driven Person Identification and Location Tracking via College Surveillance

The project aims to develop an AI-based system capable of identifying and locating individuals within a college campus by scanning their ID card and accessing the college's surveillance cameras. The system will enhance campus security and streamline the process of finding individuals in real-time.

**DATASET**

1. ID Card Dataset

2.Facial Recognition Dataset

3.Surveillance Camera Feeds

4.Location Mapping Data

5. Privacy and Security Data

**ALGORITHM**

1. ID Card Scanning and Data Extraction

- Input: Scanned image of the ID card.

- Process: Use Optical Character Recognition (OCR) to extract textual information such as the individual's unique ID number or name.

- Output: Extracted ID number or name.

2. Facial Recognition System

- Input: Extracted facial image from the ID card.

- Process:

- Preprocess the extracted image (e.g., resizing, normalization).

- Extract facial features using a facial recognition model (e.g., a pre-trained neural network).

- Compare these features with faces detected in real-time video feeds from campus cameras.

- Output: Matched face with a confidence score.

3. Camera Access and Integration

- Input: Real-time video feeds from campus surveillance cameras.

- Process:

- Interface with the existing network of cameras through APIs or direct connections.

- Continuously process video feeds to detect faces.

- Match detected faces with the facial features extracted from the ID card.

- Output: Detected face in the camera feed and corresponding match.

4. Location Identification

- Input: Camera ID from the video feed where a match was found.

- Process:

- Determine the physical location of the camera that captured the matching face.

- Map the location and present it to the user.

- Output: Current location of the identified individual.

5. Privacy and Security

- Input: Personal data and video feeds.

- Process:

- Ensure compliance with privacy regulations.

- Implement security measures to protect data and restrict access to authorized personnel only.

- Output: Secure handling of personal data.

**Expected Outcomes**

- A functional system that can accurately identify and locate individuals on the campus in real-time based on their ID card and surveillance camera feeds.

This algorithm outlines the sequential steps needed to implement the system, from initial data extraction to real-time location identification and security compliance.