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Crime Reporting System

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Abstract: ***Criminal record generally contains all the information both personal and criminal with the photograph of the person. In order to recognize Criminal, identification of some sort is required, designated by eyewitnesses. In most cases the resolution or/and quality of the recorded image sections is unsatisfactory and is difficult to recognize the face. Recognition can be achieved in various different ways like DNA, eyes, finger print, etc. One of the ways is face identification. Since facial recognition technology is powered by artificial intelligence, it can provide excellent results in identifying criminals. Even considering that most people, when committing an illicit activity, try to hide their identity: hiding their faces or covering their faces with scarves, masks, etc. In such cases, AI uses deep learning methods to identify the individual. In this project, proposed a CrimeNet an automatic criminal identification system for Police Department to enhance and upgrade the criminal classification into a more effective and efficient approach using Convolutional neural network algorithms. In our proposed methodology, a database is created by storing both full and sliced images of the criminals along with all the personal and criminal details. The captured images of the person get compared with the criminal data Law Enforcement Agencies have in their database. The Yolo v8 involves mapping the face with some facial points, allowing the true identity of the individual to be revealed. Using technology, this idea will add plus point in the current system while bringing criminals spotting to a whole new level by automating tasks. Law enforcement receive alerts when an individual claimed by the authorities is identified by our technology, speeding up their arrest and preventing new crimes. Customize notifications and alarms based on a variety of detection or recognition events and program automated security response workflows and SMS and email notifications.***

I. INTRODUCTION

Criminal is a popular term used for a person who has committed a crime or has been legally convicted of a crime. Criminal also means being connected with a crime. When certain acts or people are involved in or related to a crime, they are termed as criminal. Criminal-person means a person who is accused of committing a crime and by following a prescribed procedure, the court finds such person guilty of the charge and declares him guilty. But in the context of criminology, only the criminological definition of criminal has been accepted.

SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS

- **Central Processing Unit (CPU):** Multi-core processor (e.g., Intel Core i7 or equivalent) for parallel processing and handling complex computations.
- **Random Access Memory (RAM):** Ample RAM (e.g., 16GB or more) to support quick data access and model processing.
- **Storage:** 256 Solid State Drive (SSD) for faster data retrieval and system responsiveness.
- **Camera Setup:** High-resolution cameras capable of capturing clear facial images for accurate identification.

SOFTWARE REQUIREMENTS

- **Operating System:** Windows 11, 64- bit for stability, security, and compatibility with deep learning frameworks.
- **Deep Learning Frameworks:** TensorFlow and PyTorch for developing and deploying deep neural networks, including DeepCNN.
- **Object Detection Framework:** YOLOv8 for real-time object detection, specifically optimized for identifying faces.
- **Database Management System:** Database system MySQL for storing and retrieving criminal records.
- **Programming Language:** Python for implementing system logic, integrating frameworks, and developing interfaces.

- **Web Framework:** Flask for developing a web-based user interface, facilitating user interaction.
- **User Interface Libraries:** HTML, CSS, and JavaScript for designing an intuitive and responsive user interface.
- **Alert Notification System:** Integration with notification services for instant alert delivery to law enforcement personnel.

MODULE

1.Criminal Identification Web App

The Criminal Identification System Web App is a web-based application that is designed to identify and track criminals using facial recognition technology. The application is built using Python Flask, a popular web framework, and Tensor Flow, an open-source machine learning library. This module is designed to be user-friendly and efficient, providing law enforcement agencies with a powerful tool to track and apprehend criminals.

2. End User Dashboard

The End User Dashboard module is designed to provide a user-friendly interface for end users to perform facial recognition searches against the database of criminal records.

3.CrimeNet Model:Build and Train

Criminal Face Classification using CrimeNet refers to the use of Deep Convolutional Neural Networks (DCNN) for the classification of criminal faces. DCNNs are a type of deep learning architecture that have shown significant promise in image recognition tasks. In the context of criminal face classification, CrimeNet can be trained to automatically identify and classify images of criminal faces, allowing law enforcement officers to quickly and accurately identify potential suspects.

4. Criminals Crime Record Finder

The Criminals Crime Record Finder module plays a vital role in law enforcement by leveraging facial recognition technology to identify and retrieve the criminal history of individuals. Upon identifying a match with a high degree of confidence, the system confirms the criminal's identity by associating the facial features extracted from the input frame with a known individual within the CrimeNet Model.

SOFTWARE ANALYSIS

MYSQL

MySQL tutorial provides basic and advanced concepts of MySQL. Our MySQL tutorial is designed for beginners and professionals. MySQL is a relational database management system based on the Structured Query Language, which is the popular language for accessing and managing the records in the database. MySQL is open-source and free software under the GNU license. It is supported by Oracle Company. MySQL database that provides for how to manage database and to manipulate data with the help of various SQL queries. These queries are: insert records, update records, delete records, select records, create tables, drop tables, etc. There are also given MySQL interview questions to help you better understand the MySQL database. MySQL is currently the most popular database management system software used for managing the relational database. It is open-source database software, which is supported by Oracle Company. It is fast, scalable, and easy to use database management system in comparison with Microsoft SQL Server and Oracle Database. It is commonly used in conjunction with PHP scripts for creating powerful and dynamic server-side or web-based enterprise applications. It is developed, marketed, and supported by MySQL AB, a Swedish company, and written in C programming language and C++ programming language. The official pronunciation of MySQL is not the My Sequel; it is My Ess Que Ell. However, you can pronounce it in your way. Many small and big companies use MySQL. MySQL supports many Operating Systems like Windows, Linux, MacOS, etc. with C, C++, and Java languages.

EXISTING SYSTEM

Existing system of criminal identification by police departments typically involves manual and procedural methods for identifying individuals involved in criminal activities. Here are some key components of traditional identification systems

- **Manual Record-Keeping**

Police departments traditionally relied on manual record-keeping systems, where information about criminals, suspects, and cases was documented in physical files.

- **Fingerprinting**

Fingerprinting has been a long-standing method for identifying individuals. Law enforcement would collect fingerprints from crime scenes or individuals and compare them manually to existing records.

- **Mugshots and Photographs**

Mugshots, or photographs of individuals, have been used as visual records for identification. These images are typically kept in physical files for manual comparison.

- **Witness Testimonies**

Traditional identification often involves relying on witness testimonies. Witnesses may be shown line-ups or photo arrays to identify suspects.

- **Criminal Databases**

While databases existed, they were often limited in scope and not as interconnected as modern systems. Information exchange between different jurisdictions could be slow and cumbersome.

- **Investigative Procedures**

Detectives and investigators would employ traditional investigative procedures, relying on interviews, surveillance, and other manual methods to identify and apprehend suspects.

- **Interpol and Wanted Lists**

International identification efforts involved sharing information through organizations like Interpol, and law enforcement agencies maintained "wanted" lists to identify and apprehend fugitives.

PROPOSED SYSTEM

The proposed system aims to revolutionize criminal face identification for law enforcement through the integration of advanced technologies, specifically Deep Convolutional Neural Networks (DeepCNN) and YOLOv8. The project envisions a comprehensive system that addresses the limitations of existing methods and leverages state-of-the-art techniques for enhanced performance. Here's an overview of the proposed system:

- **User – Friendly Interface**
- **DeepCNN-Based CrimeNet Model**
- **Integration of YOLOv8 for Real-Time Predictions**
- **Criminals Record Finder**
- **Alert and Notification**

SYSTEM FLOW DIAGRAM

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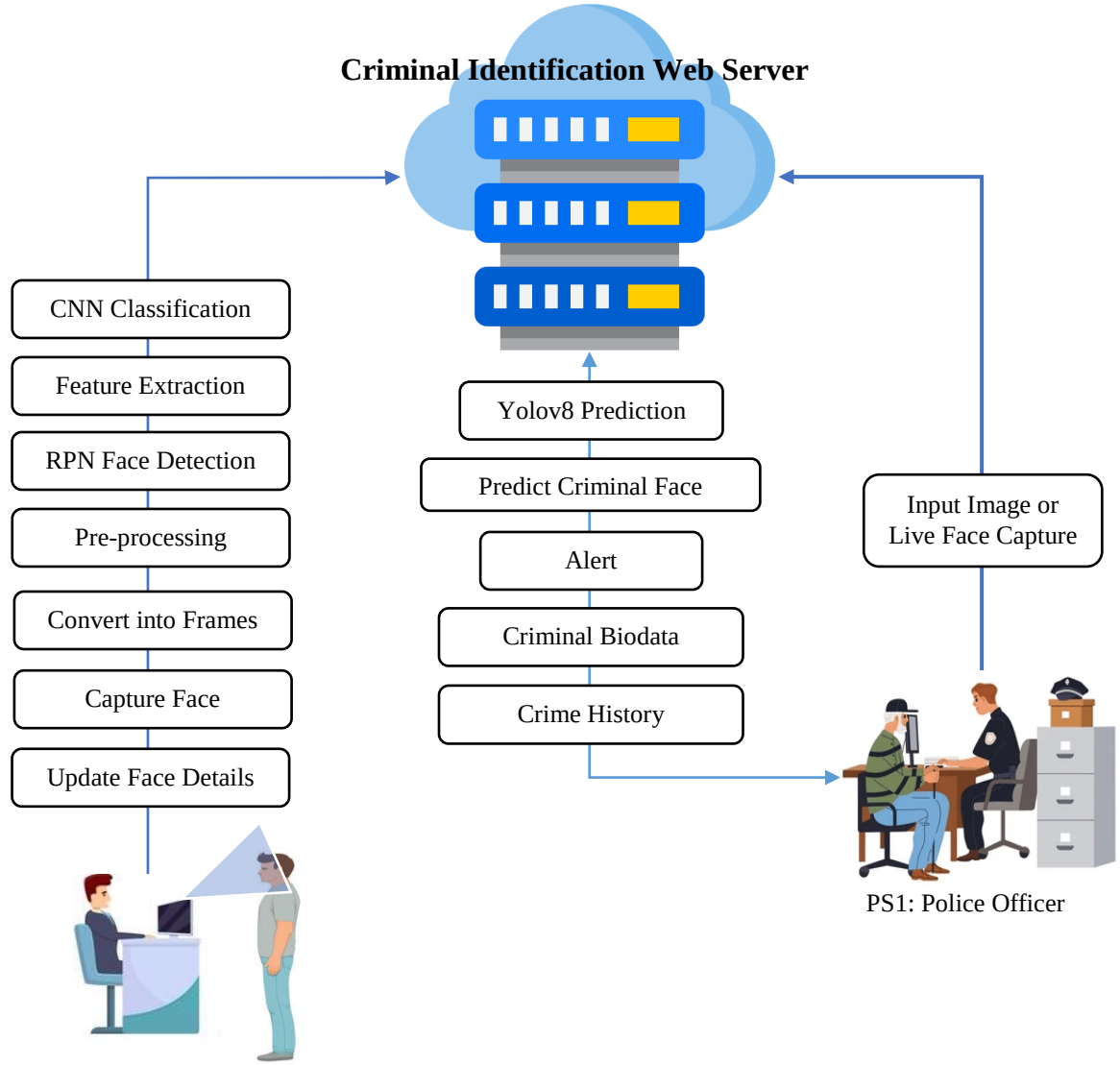

CRIME REPORT STRUCTURE

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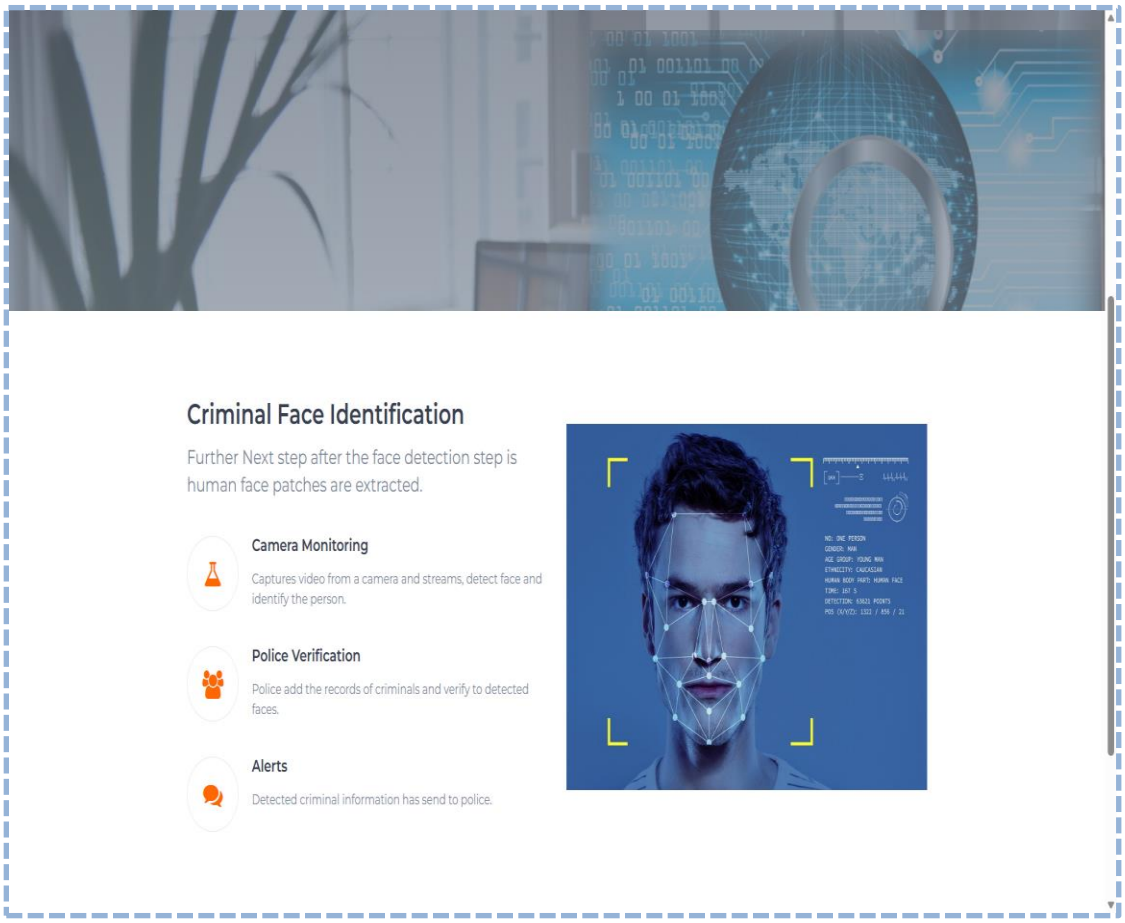
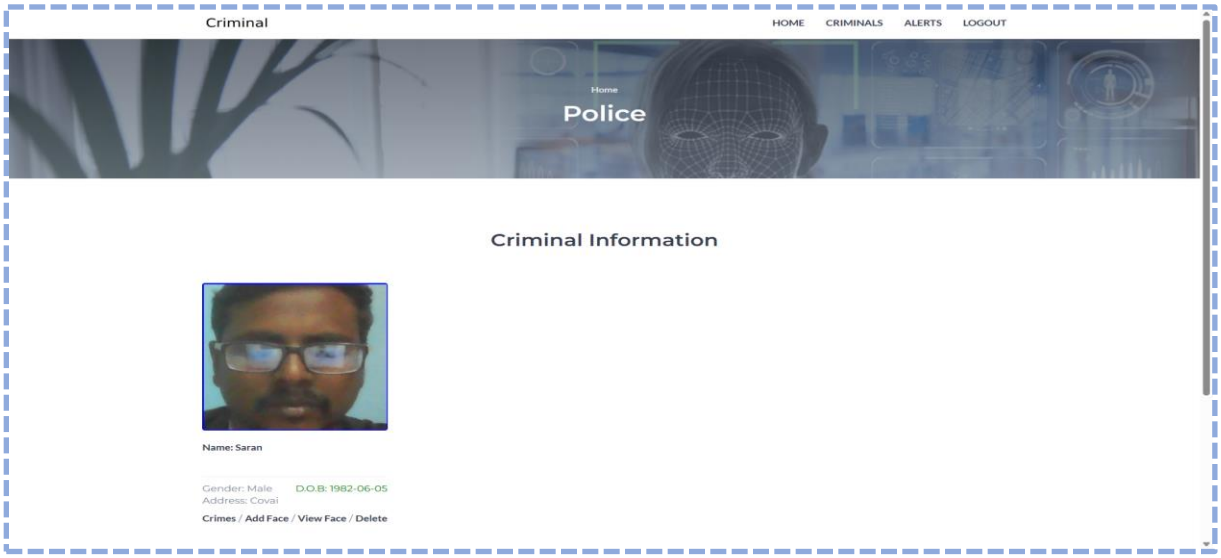


RESULT



CONCLUSION

This project presents a technologically advanced solution for law enforcement agencies in the identification and tracking of criminals. Leveraging cutting-edge technologies such as Deep Convolutional Neural Networks (DCNN), Yolo V8, and advanced facial recognition techniques, the system offers a robust framework for real-time monitoring and crime record

retrieval. The web-based Criminal Identification System, built using Python Flask and TensorFlow, serves as a user-friendly interface for law enforcement personnel. The integration of the CrimeNet Model, trained through meticulous processes such as dataset collection, preprocessing, face detection, feature extraction, and CNN-based classification, enables swift and accurate identification of potential suspects. The Criminals Crime Record Finder module seamlessly integrates with the Criminal Database, providing law enforcement with historical data on identified individuals. This database includes information on past offenses, arrests, and other relevant details crucial for understanding a suspect's criminal background. The Criminals Surveillance System enhances proactive policing by integrating with public CCTV cameras. Real-time monitoring, theft and murder detection, missing criminal's identification, and GIS integration contribute to a holistic approach to crime prevention and response. The Alert Generation and Notification System acts as a crucial component, ensuring that law enforcement officers are promptly informed in critical situations. Whether dealing with wanted criminals, missing persons, ongoing investigations, known associates, or watch list individuals, the system generates alerts containing vital information for informed decision-making. This integrated system empowers law enforcement agencies with efficient tools for crime prevention, investigation, and apprehension. The fusion of artificial intelligence, machine learning, and real-time surveillance capabilities positions the Criminal Identification and Surveillance System as a force multiplier in the relentless pursuit of public safety and security.

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