
CRIMINAL IDENTIFICATION SYSTEM

Chetan Dattatray Khopade*¹, Vedant Shirish Kulakrni*², Miss. Ashwini Kadam*³,

Meghraj Ramchandra Kudale*⁴, Atharva Dhanaji Yadav*⁵

*^{1,2,3,4,5}Smt. Kashibai Navale Collage Of Engineering, Pune, India.

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ABSTRACT

In this project we use machine learning Technique to Identify and Recognize Criminal. The process of identifying and spotting a criminal is slow and difficult. Criminals, these days are getting smarter by not leaving any form of biological evidence or fingerprint impressions on the crime scene. A quick and easy solution is using state-of-the-art face identification systems. With the advancement in security technology, CCTV cameras are being installed at most of the buildings and traffic lights for surveillance purposes. The video footage from the camera can be used to identify suspects, criminals, runaways, missing persons etc. This paper explores a way to develop a criminal identification system using ML and deep neural networks.

Keywords: Face Identification, Machine Learning, CNN And Haar-Cascade.

I. INTRODUCTION

Criminal identification refers to the process of determining and verifying the identity of individuals involved in criminal activities or suspected of committing crimes. This process is crucial for law enforcement agencies to maintain public safety, investigate crimes, and administer justice effectively. Various methods and technologies are employed in criminal identification, ranging from traditional fingerprint analysis to advanced bio-metric and forensic techniques. Criminal identification methods continue to evolve with advancements in technology, ensuring that law enforcement agencies have a variety of tools at their disposal to accurately identify and apprehend criminal.

II. LITERATURE SURVEY

Saish Sankhe, Yogesh Yadav. [1] The increasing crime rate and number of criminals have become significant concerns for police departments around the world. Identifying suspects for crime incidents is a time-consuming and labor-intensive process. Face recognition technology has the potential to assist in crime prevention and criminal identification, but it is a difficult problem in computer vision due to the high degree of variability in facial appearance. Accuracy and speed of identification are key issues in this field. However, the robustness of the system can be obstructed by humans who alter their facial features. Despite these challenges, face identification is preferred for its accuracy, cost-effectiveness, and ability to stand scrutiny in court. Other methods of criminal identification include fingerprinting, DNA matching and Eyewitness accounts, but facial recognition is more efficient and achievable.

Nagnath B. Aherwadi, Deep Chokshi. [2] We all know that our Face is a unique and crucial part of the human body structure that identifies a person. Therefore, we can use it to trace the identity of a criminal person. With the advancement in technology, we are placed CCTV at many public places to capture the criminal's crime. Using the previously captured faces and criminal's images that are available in the police station, the criminal face recognition system of can be implemented. In this paper, we propose an automatic criminal identification system for Police Department to enhance and upgrade the criminal distinguishing into a more effective and efficient approach.

Mr. R. Prashanth Kumar, Abdul Majeed. [3] There is an abnormal increase in the crime rate and also the number of criminals are increasing, this leads towards a great concern about the security issues. Crime preventions and criminal identification are the primary issues before the police personal, since property and lives protection are the basic concerns of the police but to combat the crime, the availability of police personnel is limited. With the advent of security technology, cameras especially CCTV have been installed.

D. Nagamallika, P. Vandana, P. Dakshayani. [4] In this paper, we have developed a system for detecting criminal faces, for this, we have used deep learning algorithms. Since deep learning is now the most famous technology, it is used in different applications. One such application is crime detection and prevention. This

system identifies the criminal face, retrieves the information stored in the database for the identified criminal and a notification is sent to the police personnel with all the details and the location.

Rohit Alex Badana, Lohith Morishetty. [5] Identifying and Recognizing a criminal is a time-consuming and challenging task. According to the survey of NCRB (National Crime Records Bureau), 80percent of the same criminals do the same crimes repetitively. Criminals are becoming smarter by not leaving any biological evidence or fingerprint impressions at the crime site. The face is a unique and crucial aspect of the human body structure that recognizes a person. This Face recognition from an image may be used to identify criminals or a video frame captured by the cameras that are installed in multiple regions. As a result, we may utilize it to track down a criminal's identification.

Atharv Somani, Sarthak Sonpatki. [6] To address the increasing crime rates and limited police presence, an automatic facial recognition system utilizing cascading classifiers has been proposed as a solution. The system employs automated surveillance cameras to capture real-time video streams, and applies facial recognition algorithms to detect and identify human faces. The proposed system utilizes a cascading classifier approach that leverages Haar features to identify facial features in the video streams. This method is capable of accurately identifying and tracking individuals, even in challenging lighting and environmental conditions. To identify criminals, the system compares processed facial images against a database of known criminals.

III. MOTIVATION

The pursuit of justice, the protection of public safety, the closure of unresolved cases, the deterrence of criminal activities, and the ethical and humanitarian values that underpin a just and secure society. These motivations collectively guide the efforts to develop, refine, and implement effective methods of criminal identification.

IV. GAP ANALYSIS

Existing System	Our System
1.Criminal details were mainly managed using records books or stored as software records in the database	1. This project is aimed at developing an application called Real-Time criminal identification system based on face recognition.
2.Previously when a criminal is found guilty the picture of the criminal is being taken and stored in records but these pictures serve no purpose.	2. We are able to detect and recognize faces of the criminals in an image and in a video stream obtained from a camera in real time.
3.Existing methods will only help in managing criminal records and those methods will not finding criminals from any location.	3. This application can recognize faces in different lighting conditions with high accuracy

V. PROPOSED SYSTEM

The primary goal of criminal identification methods is to enhance public safety by identifying individuals who have committed crimes. Criminal identification serves as a deterrent to potential offenders. Criminal identification methods provide law enforcement with tools to conduct accurate and efficient investigations. Identifying criminals is fundamental to the administration of justice. Advanced identification methods, such as DNA profiling and forensic techniques, help in solving old cases unsolved crimes from the past. Identifying criminals can provide a sense of closure and justice to victims and their families. Criminal identification methods also play a role in ensuring national security by identifying potential threats, such as terrorists or organized crime members.

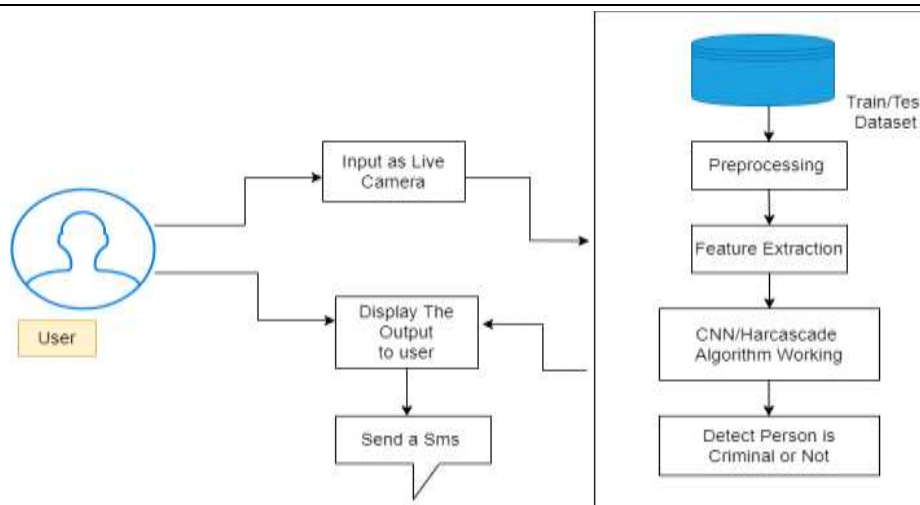


Fig 1: System Architecture Diagram

VI. CONCLUSION

Developing a comprehensive Criminal Identification System is a complex and multifaceted endeavor that requires meticulous planning, robust technical solutions, and a deep understanding of legal and ethical considerations. A successful Criminal Identification Project relies not only on technological advancements but also on effective collaboration between law enforcement agencies, data specialists, and IT professionals. By addressing the technical challenges thoughtfully and by staying abreast of emerging technologies and best practices, law enforcement agencies can create a robust, secure, and efficient Criminal Identification System that stands the test of time, ensuring a safer and more secure society for all.

VII. REFERENCES

- [1] Saish Sankhe, Yogesh Yadav, "Survey Paper on Criminal Identification System", VIVA Tech International Journal for Research and innovation Volume 1, Issue 4 (2023) ISSN (Online): 2581-7280.
- [2] Nagnath B. Aherwadi, Deep Chokshi, Sagar Pande, "Criminal Identification System using Facial Recognition", <https://ssrn.com/abstract=3884827>.
- [3] Mr.R.Prashanth Kumar, Abdul Majeed, "Real-time Criminal Identification System Based on Face Recognition", Advanced Science Letters E-ISSN:1936-7317.
- [4] D.Nagamallika, P.Vandana, P.Dakshayani, "Criminal Identification System using Deep Learning", © 2021 JETIR July 2021, Volume 8, Issue 7.
- [5] Rohit Alex Badana, Lohith Morishetty, "Criminal Identification System using Face Detection and Recognition", Vol 13, Issue 03, March/2022 ISSN NO:0377-9254.
- [6] Abhinay Kalyankar, Mangesh Patil, "Criminal Identification System using Haar-cascade Algorithm", 2022 IJCRT — Volume 10, Issue 6, June 2022 — ISSN: 2320-2882.
- [7] Mr Jagdesh M, Sam Gabriel, "Criminal Identification by Face Recognition through Camera Using Image Processing ", 2024 IJNRD—Volume 9, Issue 3, March 2024— ISSN: 2456-4184 — IJNRD.ORG.
- [8] Abhishek Muley, Rameshwar Darade, "Criminal Identification using 2D Face Recognition System ", 2022 JETIR June 2022, Volume 9, Issue 6.
- [9] Afnan basha, Firoz khan, Gunasheel S, "Criminal Identifications System For Law Enforcement Department using Deep Learning", International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Referred International Journal) Volume: 06/Issue:03/March-2024.
- [10] Atharv Somani, Sarthak Sonpatki, "A Survey Paper on Live Criminal Detection using Facial Recognition and Tracking Algorithms ", International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Referred International Journal) Volume: 05/Issue:05/May-2023.