



“FINDING MISSING PERSON USING AI”

Anuja Raghorte¹, Siddhi Dabhade², Hitakshi Shahare³, Ishika Urkude⁴, Dinesh Jamthe⁵

Computer Science and Engineering, Priyadarshini Bhagwati College of Engineering, Nagpur, Maharashtra, India

Abstract : Face recognition: An approach to biometric technology in which a face and its patterns are captured as digital image file that is unique map of the face used as signature. This method allows for accurate recognition of a person based totally on their facial capabilities. Once any face is detected which detects and compares it to the stored models in its database and if their is a match, it informs the concerned authorities or person. Missing persons are a worldwide issue that wants solving urgently.

Numerous research studies have researched special techniques and equipment for this reason, however there are boundaries and demanding situations which additionally want to be addressed. Today in the contemporary global, computing technology has much stated every single aspect of our lives with facts being a main propulsion pressure within this machine. Worldwide, many — such as children and older people or those with disabilities — go missing. sadly, 500 missing character instances pass unaddressed each day in India.

Computer programs analyze digital images and video frames of faces that have come to be the preferred of facial reputation era in figuring out lacking individuals. Facial feature detection and popularity have come to be even greater superior with the widespread utility of artificial intelligence (AI). Despite the fact that AI has contributed to expanding architectures for human-computing device interplay.

Key Words: Artificial Intelligence (AI), Python application, face detect, Image capture, Database comparison, Admin notification, AI enabled photography, Geological analysis.

I. Introduction

The search for missing persons is a international trouble that has some distance-reaching implications for individuals, families, and society as an entire. traditional techniques of trying to find missing persons may be slow, useful resource-in depth, and often yield constrained results. but, with the speedy progress of era, new and modern methods have emerged. One such method is using synthetic Intelligence (AI) in locating missing people. Artificial intelligence structures can overview large swaths of information — facial capabilities or warning signs and symptoms in a missing person case, as an instance — permitting for faster and more efficient identity. This paper aims to investigate AI-based issues, with a focus on facial recognition technology. The evaluate will study the strengths and weaknesses of those systems and suggest how they could speed up and improve the satisfactory of lacking humans enquiries. via improving the accuracy of search operations, AI-supported strategies preserve incredible promise for strengthening the chances of returning missing people to their families and communities.

As society keeps to strengthen technologically, facial reputation and detection generation has become increasingly more sophisticated. it is now the most commonplace method for identifying humans and is widely used by law enforcement organizations. on this paper, we propose the improvement of a venture to find missing individuals the use of facial popularity generation. The aim of the undertaking is to make it more handy for each common people and the police branch to discover their cherished ones inside a shorter time frame. Our project will create a complete database of missing persons, so that cops can without difficulty hint lacking individuals or guardians can file missing person reviews. members of the public can also be capable of add pix of missing people to the database, if you want to then be in comparison with existing pix to determine if a in shape occurs. by way of incorporating facial recognition technology into the look for lacking individuals, we are hoping to improve the speed and accuracy of finding lacking individuals and bringing them back to their loved ones.

Every day, thousands of individuals go missing, including the sick and elderly, children, disabled persons, and those suffering from dementia and Alzheimer's disease. Regrettably, some of the missing persons still cannot be located. In this paper, we propose a device which uses facial recognition algorithms to enhance the capability of searching for a missing person. This will serve to assist not only the police in locating missing individuals but also society at large. The device is intended to use face recognition technology to assist in identifying people who may have information about the whereabouts of the missing person.

The device has the capacity to revolutionize the manner we look for missing persons and appreciably enhance the performance of the hunt system. One of the best purposes for an academic facial reputation system is — looking for missing human beings. So to make this system more green and effective we are presenting a mobile application improvement in order to be available for volunteers. This app is intended to bring the volunteers in real duty with the help of which missing people can be discovered with less time lag. With referenced volunteers in the search, the burden at the police department can be reduced, which makes locating a missing man or woman a good deal easier. The app will use facial recognition technology to compare photos of the missing person with recent pictures in order to identify them more quickly and accurately. In practice, the proposed software could greatly improve the process of locating missing persons, bringing them home safely and reuniting them with their families.

Because the method of attempting to find lacking persons may be a daunting challenge, there is a want to automate the system to make it quicker and greater green. One ability answer is to apply automation to recognize a selected photograph and evaluate it with other photographs to determine whether they have the equal characteristics. This process might involve facial reputation technology to suit photographs of a lacking character with different pix of individuals in a particular vicinity. If a fit is located, the police can start running on the subsequent steps to find the missing individual in that location. with the aid of automating this method, it would be feasible to lessen the effort and time required to find a missing person.

This will drastically improve the chances of locating the missing person fast and reuniting them with their loved ones. In our application, we are imposing a characteristic designed to store comprehensive facts approximately lacking people. This system will make use of superior picture recognition technology to research and perceive snap shots, facilitating the quest and restoration of missing people. by using compiling facts which include photographs, private details, and remaining recognized places, we aim to decorate the effectiveness of seek efforts and provide valuable guide to families and regulation enforcement agencies.

II. Motivation

India is in trouble, with children aged 10 or younger reported missing at an average rate of 296 every day. This means that a whopping 9,019 children vanish every single month and there has been a noticeable pattern. 130337 were lost in 2020, as per the National Crime Records Bureau which published a report on missing children across the country, during the difficulties of Covid. Of these, 33456 were girls and 15410 were boys and by the end of the year, about 43,661 children have been recorded as missing. All these facts and events show that the problems of the country should be addressed in such a manner that such situations will not arise in the future.

The physical technique of locating a missing figure can be quite time-consuming and often involves lengthy procedures, including delays in lodging a primary complaint (FIR) at a police station. moreover, the team of workers trying to find missing persons is often limited, which contributes to the fact that many cases remain unsolved. This inefficiency highlights the urgent need for more efficient and effective techniques to facilitate faster responses and better outcomes in the absence of individual investigations.

In India, it is shocking that stats show that every day, on average, 296 children go missing. Over the course of a month this figures mounts up to an alarming 9,019 missing children cases, and nearly half of those cases are unresolved. This situation worsened during the 2020 Covid-19 pandemic since another report by the National Crime Records Bureau claims that there were 108,234 missing children across India. Of these missing children, 33456 were girls and 15410 were boys, with 43661 still unaccounted for as the year drew to a close.

This information points to a significant gap in the establishment of a national repository for missing children. According to an official source, "There are no dedicated budgets for tracking missing persons." This lack of resources further complicates efforts to effectively address the issue.

III. Existing System

Upon reviewing the website, it became clear that the method for filing pictures of doubtlessly suspicious youngsters in a single's region is complicated and lacks anonymity. Many people hesitate to file due to the have an impact on of powerful people worried within the exploitation of these children, which underscores the want for a greater discreet submission choice. Moreover, the initiative isn't leveraging device gaining knowledge of, that may significantly beautify its effectiveness given the size of the difficulty. An automatic solution is vital to streamline the identity and reporting manner.

The internet site consists of a phase titled "Photographs of Missing Persons," where customers can locate all to be had facts on lacking individuals, together with a separate tab for "Photographs of Recovered Children," supplying a thorough review of each classes. This initiative is designed to encourage folks who sincerely wish to help law enforcement in locating missing persons. However, there is a large chance that people worried in exploitative sports—which includes infant hard work or other illegal operations—could misuse the facts. This poses extreme issues, as those seeking to assist would possibly face intimidation or retaliation. The ability for such misuse increases crucial safety worries for each person concerned inside the reporting procedure.

The modern mining helmet is designed to defend miners' heads from numerous injuries, but it falls quick in addressing environmental attention. Its heavy weight and discomfort regularly lead miners to remove the helmet, setting them at hazard in dangerous conditions. Additionally, there is no clever helmet available that may display the surroundings and make choices to enhance employee safety. In the occasion of a poisonous gas leak, there may be no mechanism to supply oxygen to the miners. Furthermore, growing a seamless conversation surroundings stays a significant challenge for mining agencies.

III. Literature Survey

The paper examines how AWS's AI-driven facial recognition algorithm is getting used to successfully locate missing individuals. This next-generation system makes use of one-shot mastering, which has proven sizable ability. It can be applied in sectors which include inns and hospitals for speedy identification of people with criminal intent. The machine's intention is to streamline identification strategies, replacing manual techniques with a more efficient facial popularity solution.

This paper offers a singular technique for figuring out valid passport holders via the Passport database. By combining photograph processing strategies with the LBPH (Local Binary Patterns Histograms) model, the technique achieves extraordinarily accurate results.

This method complements safety via figuring out unauthorized vacationers and criminals, using webcam pictures and classifiers to assess pictures towards the database. It may additionally verify vacationer information with police stations if related to tremendous problems which include loans.

1. Any other paper presents an automated face popularity gadget for attendance monitoring. The usage of tool mastering strategies, the system captures facial pix and compares them with a database to make certain correct detection. It employs an SVM classifier for call popularity and a gradient-oriented histogram for face detection. Generation used embody OpenCV for picture reputation, Tkinter for the user interface, and Numpy for array processing. The machine examined excessive accuracy, reaching ninety nine.38% in finding out.
2. A device defined in one paper makes use of CCTV photos to fit pix against a crook database while fingerprint information isn't to be had. This approach entails four key levels: planning, necessities analysis, system design,

and implementation/trying out. Principal Component Analysis (PCA) is employed to in shape photographs among CCTV captures and the database, with good sized testing carried out to affirm the accuracy and performance of the device.

3. In 2020, researchers Sarthak Babbar et al from Jaypee Institute of Information Technology, Noida published a study that compared the performance of Amazon Web Services (AWS) Recognition. The study compared it with other algorithms like CDAC-VS and CNN. The study was even posed to address challenges like aging in facial popularity structures; where the ResNet version achieved a ninety eight.Forty% accuracy at the CACD-VS dataset, while AWS Recognition reached an excellent 99.Forty five%. These results show the high precision rate that AWS Recognition offers, more so on move-age facial reputation.
4. Another system reviewed entails actual-time picture training and evaluation. It employs a Haar-classifier for detecting faces and matches pix captured by way of surveillance cameras with actual-time facts. This setup lets in for the identity of multiple people and suggests the capacity integration with Aadhaar, the national identity system, to enhance its potential to music suspects and verify criminal records.
5. In their paper "Criminal Identification System Using Facial Recognition," Nagnath B. Aherwadi and co-authors discover how facial popularity generation can automate crook identification. Using OpenCV, they show how photo processing techniques can optimize the identity method, addressing challenges related to guide strategies.
6. A 2014 observe by using Swarna Bai Arniker and her team proposes an RFID-primarily based system for identifying lacking folks. The device includes setting RFID readers at police stations and public areas to locate lacking youngsters, aged human beings, and those with disabilities. By equipping those people with RFID tags, they may be easily identified and reunited with their families or caregivers. However, the machine's effectiveness depends on the character wearing the RFID tag. The paper presents this as a capability future solution to improve the performance of finding lacking humans.

IV. Proposed System

The proposed system employs several procedures aimed at locating lacking people, as illustrated in Fig. 1.

This device's normal architecture is designed to cope with the constraints of previous solutions. The intention is to expand a more comprehensive device that consists of capabilities absent in current systems. Key improvements consciousness on adding functionalities for submitting new cases and registering missing individuals, alongside enhancing the person experience for these tasks.

The system's face reputation feature, powered with the aid of AWS Rekognition, compares facial records from uploaded snap shots with those saved in its database. When a suit is discovered, each the authorities and the individual's circle of relatives could be notified, at the side of the area in which the individual was ultimate visible.

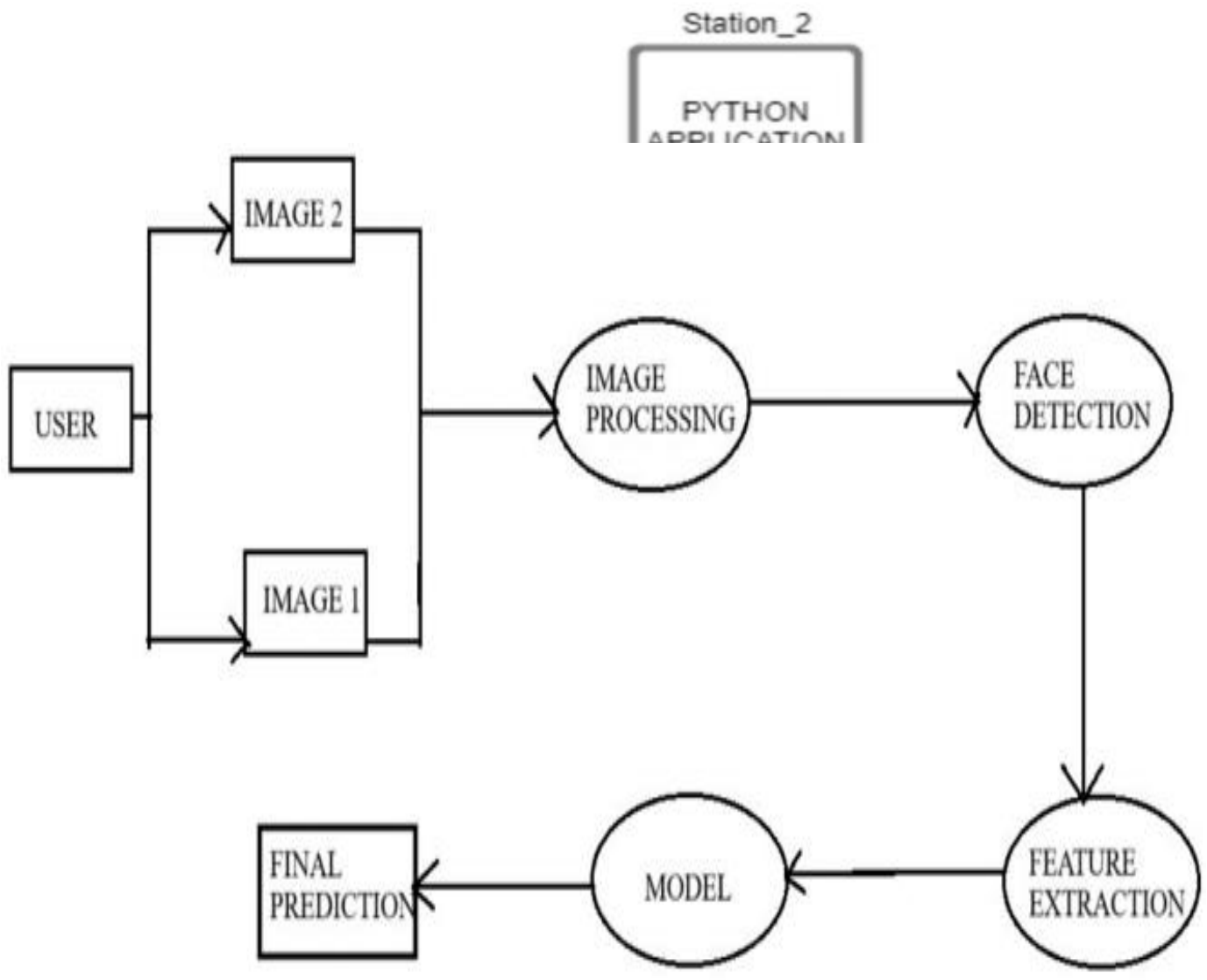


Fig. 1. Structure of System

Fig. 2. Architecture

A. Presentation Layer :-

The front-end factor is liable for supplying a consumer-friendly interface. To submit a complaint and keep records inside the database, customers are required to log in and offer the essential information thru the login page.

B. Enterprise Layer :-

The web provider within the business layer features as a bridge between the presentation and database layers, forwarding person requests to the database. Its role is to retrieve, technique, and shop person information into the database.

C. Database Layer :-

The database layer is tasked with storing data and responding to person queries. on this assignment, we employed personal home page, HTML, MATLAB, and MySQL in conjunction with the XAMPP database to manipulate the data storage.

V. Methodology

Our machine's method is primarily based on the usage of dlib's facial landmark detection to pinpoint the precise facial functions of a missing individual. This approach leverages one-shot learning to stumble on around sixty eight distinct key points at the face. those factors are captured as floating-factor values with a precision of about eight decimal locations.

AI-Powered image class:

The system relies on the Convolutional Neural Networks (CNN) to classify images efficiently and precisely. A labeled dataset of images was trained in order to aid in an accurate identification and classification of people in surveillance videos.

Geolocation Analysis:

It uses advanced algorithms to deliver highly accurate geolocation data. Starting from the camera location, the system computes the precise longitude and latitude of the detected individuals who provide critical location information that supports the searching and rescue team.

Real-Time Notifications:

The system makes use of Telegram in the display of real-time alerts. In case a character is diagnosed with missing, instant alerts are issued that contain details, such as the identity of the person, their coordinates, and how close they are to the camera. This ensures rapid search and rescue team responses.

VI. Output

The consumer will first log in with their username and password. After logging in, they could create a trendy case through uploading an photograph and getting into the specified facts in advance than saving it. As soon as saved, a confirmation message might be displayed, indicating that the case turn out to be stored successfully.

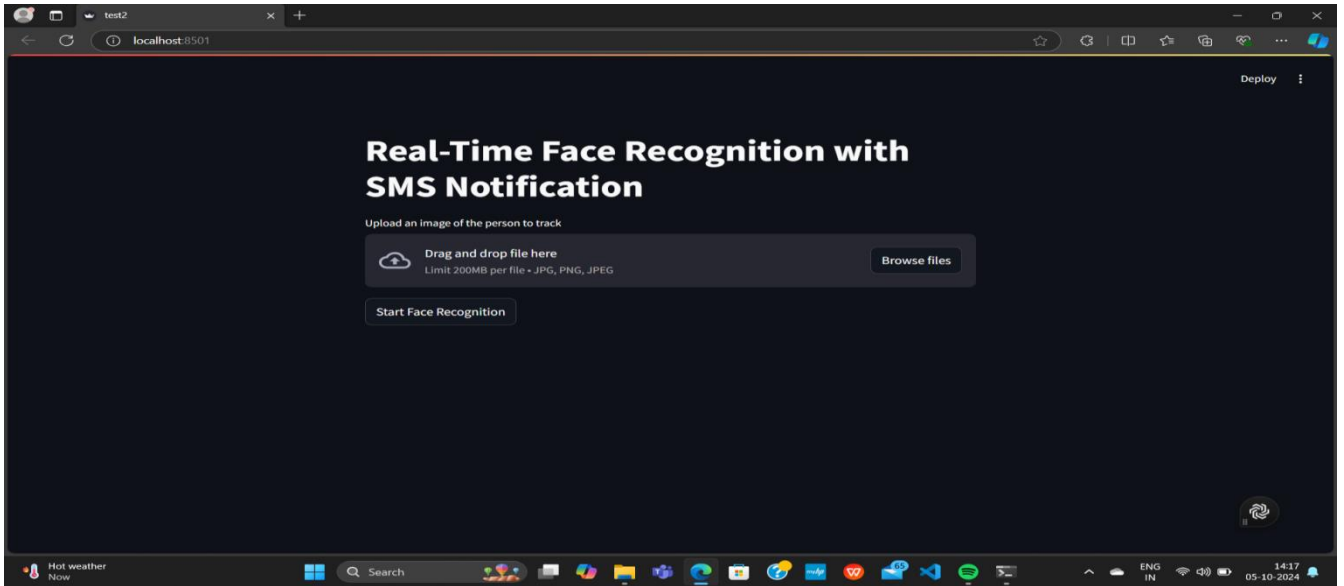


Fig. Upload Image Using Browse Files

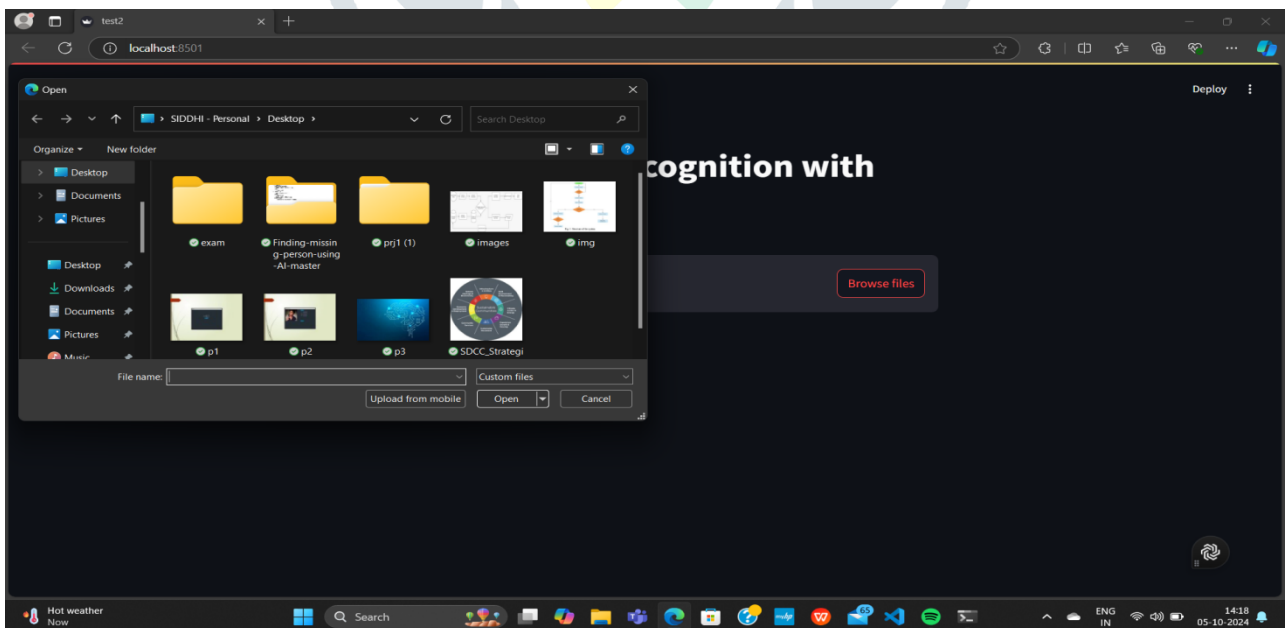


Fig. Choose Image

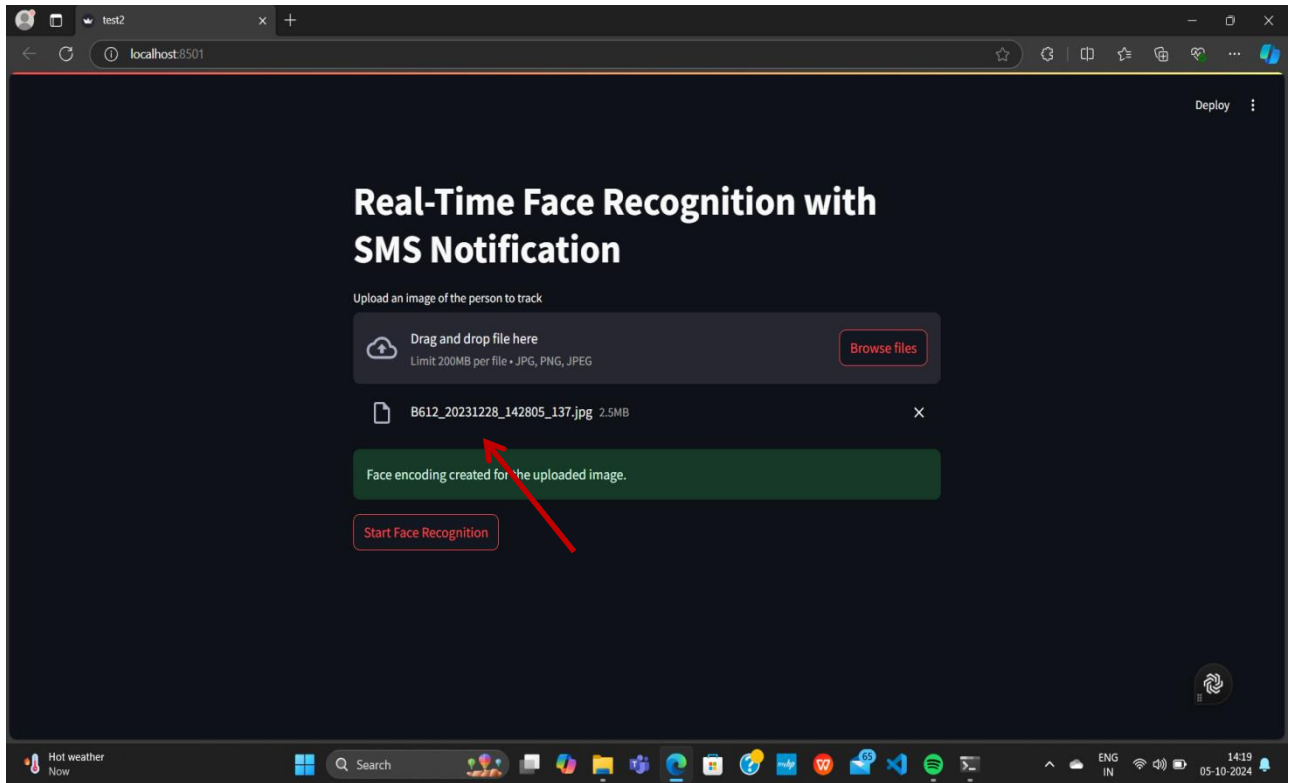


Fig. Start Recognition

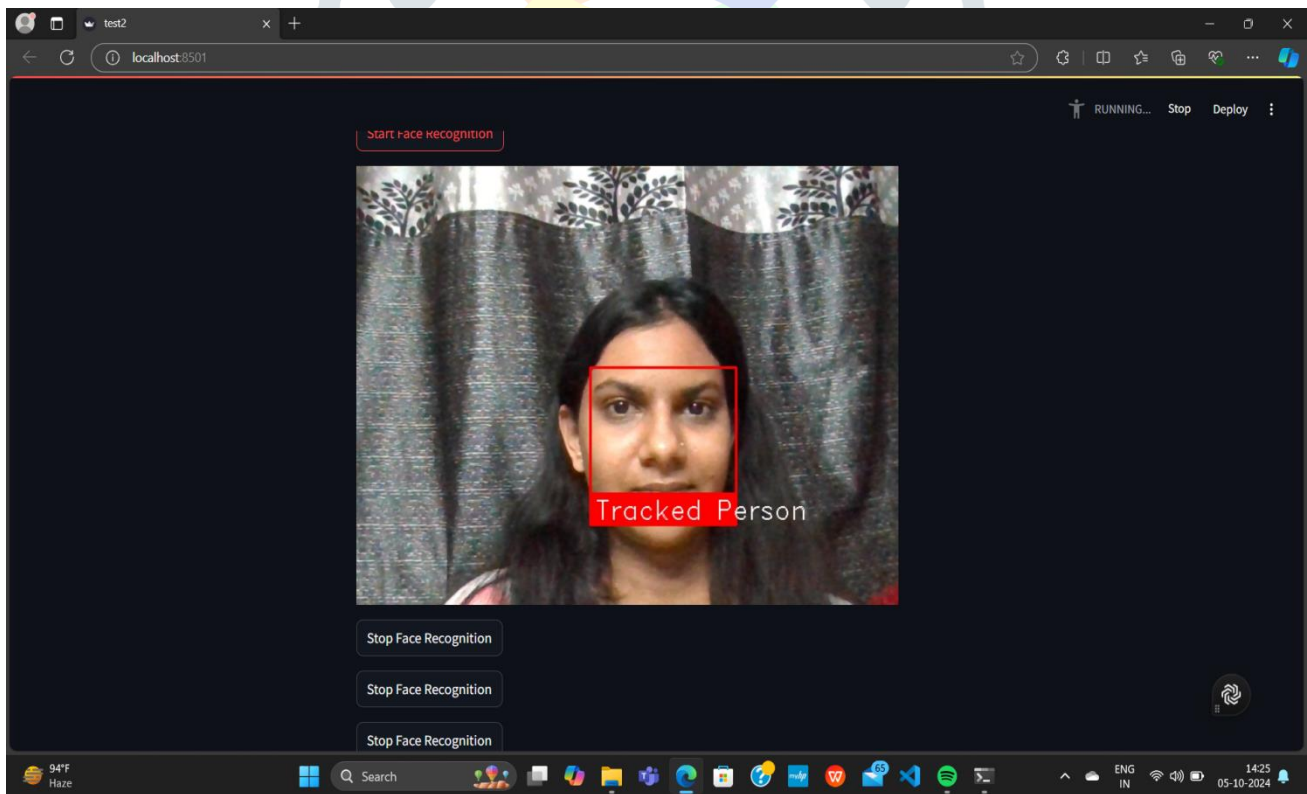


Fig. Tracked Person

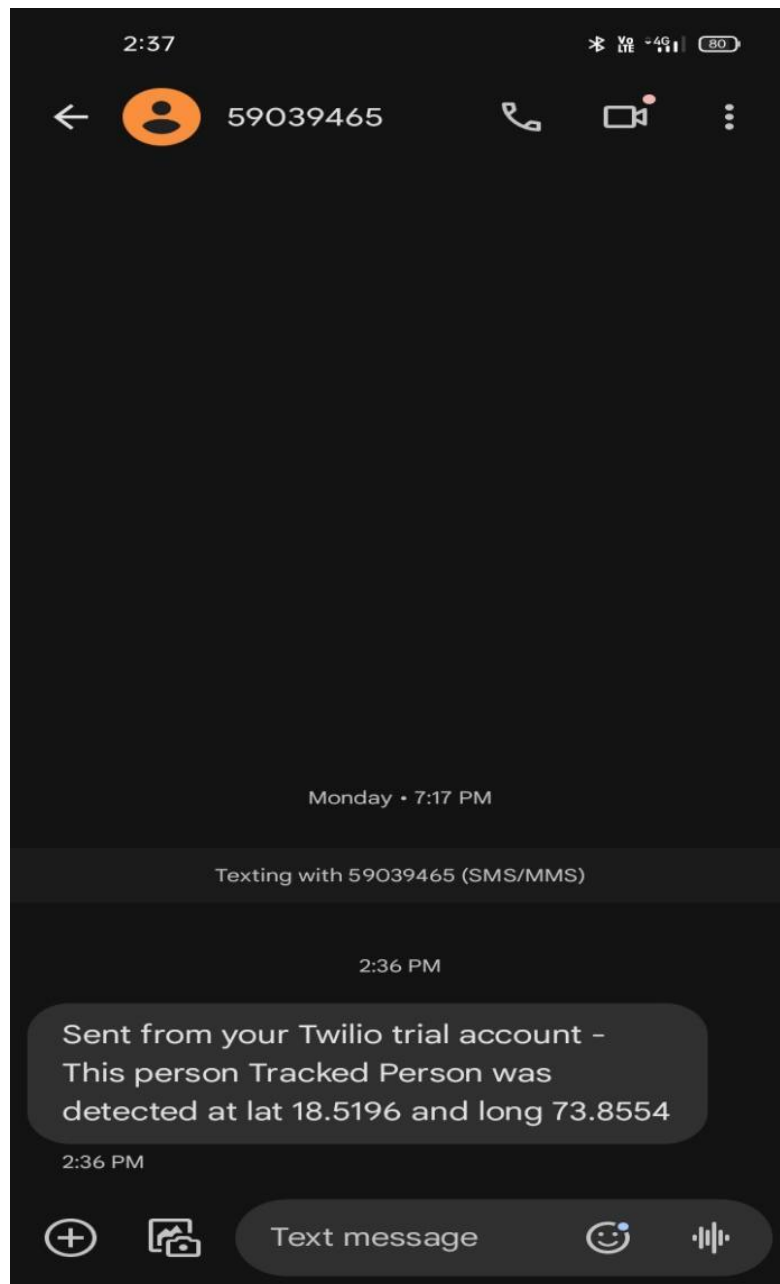


Fig. SMS Sent On Mobile

VII. Conclusion

This era additionally permits the fast identity of lacking people. Instead of manually sifting through photo databases, our advanced facial recognition machine automates the procedure successfully. Powered through one-shot studying, image popularity has emerged pretty powerful. While properly applied, this generation gives severa benefits, consisting of speedy identification of perpetrators in resorts or hospitals.

It also widely accelerates the searching of missing people. The machine replaces the entire process of checking every single photo, which completes the work much faster by utilizing a high-speed face identity system. In the future, we goal to enhance the gadget by means of integrating it with public surveillance cameras for real-time facial detection. Video feeds from these cameras might be continuously analyzed by means of our machine, which might monitor the footage for any fits. If a missing person is detected, the system will at once alert the applicable authorities, making sure a fast reaction.

Conclusion In this project, a progressive machine that uses synthetic intelligence has been successfully built to enhance the way missing people are to be found. AI algorithms used in our design, image class, geolocation analysis, and real-time alerting are way more powerful search and rescue operations. The use of Convolutional Neural Networks (CNN) significantly advanced the accuracy of detection from fake positives and reliable identification of people in surveillance pictures.

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