

# **Vision Rescue**

## **Project Synopsis Report**

*Submitted in partial fulfilment of the requirement of the degree of*

### **BACHELOR OF TECHNOLOGY in CSE with Specialization (AI & ML)**

*to*  
**K.R Mangalam University**  
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### CERTIFICATE

This is to certify that the Project Synopsis entitled, "VISION RESCUE" submitted by "Harsh Sen(2301730194), Sahil Chaudhary (2301730193), Arpit Tyagi(2301730168), Anjaney Paliwal(2301730203)" to K.R Mangalam University, Gurugram, India, is a record of Bonafide project work carried out by them under my supervision and guidance and is worthy of consideration for the partial fulfilment of the degree of **Bachelor of Technology** in **Computer Science and Engineering** of the University.

**Type of Project: Industry**

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## 1. ABSTRACT

The CrowdFind: AI-Powered Missing Person Tracker is a cutting-edge tool that uses facial recognition, artificial intelligence (AI), and real-time data analytics to help find missing people. In order to provide quicker and more effective tracking of missing persons, this initiative attempts to close the gap between conventional search methods and contemporary AI-driven solutions.

The system works by gathering and examining facial photos from a variety of sources, such as user-submitted reports, social media, and CCTV footage. These photos are processed by sophisticated deep learning models, which in a matter of seconds find possible matches. When a missing individual is located, the real-time alert system notifies registered users and law police.

The following are the project's primary goals:

- creating a facial recognition system driven by AI to find missing people.
- using crowdsourcing data collection in real-time to broaden the search network.
- utilizing encrypted cloud storage to ensure ethical and safe data usage.
- supplying an easy-to-use mobile application and website for convenience.

This project is a socially significant endeavor that uses contemporary technology to improve searches for missing persons, bring families back together, and lower the number of human trafficking cases that occur globally.

**KEYWORDS:** Improved accuracy, Facial recognition, Machine Learning, Artificial Intelligence

## 2. INTRODUCTION

Law enforcement, humanitarian agencies, and families are all impacted by missing person situations, which represent a global crisis. Due of their limited data accessibility and sluggish response times, traditional search techniques including human searches, media broadcasts, and police investigations frequently fall short.

Automated tracking and recognition systems have become effective instruments for public safety and criminal prevention thanks to developments in AI, machine learning, and cloud computing. Many people utilize these technologies for:

- facial recognition for surveillance and security.

- Verification of identity in government and banking services.

- object detection in autonomous systems in real time.

Building on these developments, the Crowd Find project provides an automated missing person tracking solution that blends crowdsourced data, AI-driven facial recognition, and real-time warning systems.

By offering a centralized platform where missing person reports may be uploaded, searched, and matched using AI, this project aims to assist law enforcement, non-governmental organizations, families, and communities.

### **3. MOTIVATION**

There are several reasons why this effort is motivated:

A number of serious issues with the current search systems make an AI-powered missing person tracker necessary.

**1. A growing number of cases involving missing persons**

Millions of individuals disappear every year all across the world.

Trafficking victims, the elderly, and children are particularly vulnerable.

Inadequate search methods cause many instances to go unsolved.

**2. Drawbacks of Conventional Approaches**

The likelihood of recovery is decreased by the too long duration of manual searches.

The effectiveness of searches is impacted by the restricted resources available to law enforcement.

Inefficiencies result from missing persons databases that are not connected.

**3. The Influence of Crowdsourcing and AI**

AI is able to quickly identify millions of photos by processing them in real time.

The search network is widened by public reports that are crowdsourced.

Response times are accelerated by automated warnings and notifications.

CrowdFind develops a potent, scalable, and effective missing person identification solution by fusing AI and crowdsourcing.

## **4. LITERATURE REVIEW**

The development of AI-powered missing person trackers is supported by a number of studies and technological advancements.

### **1. Artificial Intelligence for Face Recognition**

High face detection accuracy has been attained using FaceNet, DeepFace, and OpenCV.

Law enforcement uses biometric recognition systems driven by AI.

Facial analysis is enhanced by deep learning methods like Convolutional Neural Networks (CNNs).

### **2. Using Crowdsourcing to Find Missing Persons**

Public engagement is used by platforms such as NamUs and FindMyChild to locate missing people.

Integrating AI can improve search speed and accuracy.

### **3. Privacy and Ethical Issues**

GDPR and other data protection regulations must be adhered to.

Racial and gender prejudices must be avoided in the construction of AI models.

To stop misuse, access control and user data encryption are essential.

This review emphasizes how crucial it is to combine AI effectiveness with moral and legal protections.

## 5. GAP ANALYSIS

Even while facial recognition technology is available, there are still limitations in its practical use for searching for missing people.

### Gaps Found

#### Inadequate Public Database Integration

AI systems' reach is limited because they mostly rely on government databases.

#### Absence of Alerts in Real Time

Instant notifications are not offered by the majority of missing person search tools.

#### Privacy Issues

One of the biggest problems with AI-based tracking is the risks to data security.

### How CrowdFind Closes the Distance

AI-driven real-time scanning that provides immediate alerts.

crowdsourced data gathering to reach a wider audience.

Safe, moral AI deployment with robust encryption and privacy safeguards.



## 6. PROBLEM STATEMENT

Traditional missing person tracking methods often suffer from inefficiencies and delays, leading to unsuccessful recoveries and prolonged response times. These conventional approaches rely heavily on manual investigations, outdated databases, and limited public participation, which can significantly hinder the speed and accuracy of locating missing individuals.

To address these challenges, **CrowdFind** aims to develop an **AI-powered missing person tracking system** that leverages advanced technologies to enhance search efforts. This system will integrate **crowdsourced data**, allowing the public to actively contribute valuable information in real time. Additionally, it will utilize **real-time notifications** to alert relevant authorities and communities instantly when a missing person is reported, ensuring a swift response.

A key component of **CrowdFind** is its incorporation of **facial recognition technology**, powered by deep learning and artificial intelligence. By using sophisticated algorithms, the system can analyze and compare facial features with existing databases and live images, significantly improving identification accuracy. This automated approach will reduce reliance on traditional, slower verification methods, expediting the search and increasing the likelihood of successful recoveries.

Beyond improving efficiency, **CrowdFind** also prioritizes ethical considerations such as **data privacy, security, and bias mitigation**. Adhering to **GDPR** and other data protection regulations, the platform will ensure that sensitive information is handled responsibly. Measures such as **encryption, access control, and unbiased AI training** will be implemented to safeguard user data and maintain fairness in the identification process.

By combining **crowdsourced efforts, real-time alerts, and AI-driven facial recognition**, **CrowdFind** seeks to revolutionize the way missing persons are located, ultimately **enhancing response times, increasing accuracy, and improving overall success rates in recoveries**.

## 7. OBJECTIVES

Increased missing person cases show that there is an urgent need for a more efficient, accurate, and responsive tracking system. Traditional means, characterized by excessive and largely dependent manual investigations, media announcements, and outdated databases, remain very slow in response, with the consequent chances of retrieving victims being slender. To solve this challenge, we lay out a strong proposal for a next-generation facial recognition system based on advanced AI technology, which would allow matching missing persons at a noticeably higher speed and precision.

The proposed application will employ AI and deep learning algorithms to match and analyze facial features against an extensive database of missing persons. More significantly, it will improve identification accuracy and lessen the time required to identify a target person. More advanced AI models will be trained to recognize facial changes occurring due to aging, light exposure, and various angles to allow reliable identification, even in some of the challenging scenarios.

Furthermore, the application proposes that, besides enhancing facial recognition capabilities, should the system be regarded as one of the means to create real-time alerts and notifications, such alerts will be sent directly to relevant authorities, law enforcement agencies, and families of the missing whenever a potential match is found. Real-time notifications will facilitate rapid action and therefore increase the likelihood of recovery operations being undertaken and concluded very swiftly.

In the bid to achieve great success, the system will also enhance the missing person search process using crowdsourcing mechanisms. This will allow for real-time public contributions such as images, sightings, and location updates, thus broadening the network for the search. This measure will work to harness the collective power of communities, volunteers, and social networks to improve the efficiency and outreach of searches.

While leveraging AI for better tracking, it is equally important to ensure the protection of users' data with ethical and secure encryption methods. The system will observe global data privacy laws such as GDPR and ensure strict security through methods such as encryption or access.

## 8. TOOLS/ TECHNOLOGIES USED

For this project, we have used various latest technologies which will be evaluated in this chapter with every detail of why it is used.

1. **Programming Languages:** Python, JavaScript
2. **Machine Learning Frameworks:** TensorFlow, OpenCV, FaceNet
3. **Database Management:** MySQL, Firebase
4. **Cloud Computing Services:** AWS, Google Cloud, Azure
5. **Web Development:** React.js, Node.js
6. **Mobile Application:** Flutter, React Native

Reasons for Selecting this language:

- a. Short and Concise Language.
- b. Easy to Learn and use.
- c. Good Technical support over Internet
- d. Many Packages for different tasks.
- e. Run on Any Platform.
- f. Modern and OOP language

## **9. METHODOLOGY**

### **1. Data Collection:**

- Gather datasets of missing person images from official sources and social media.
- Allow users to upload images through a web/app interface.

### **2. Model Training and Development:**

- Train AI models using deep learning techniques for face detection and recognition.
- Use CNN-based models for accurate facial identification.

### **3. Real-Time Processing and Matching:**

- Compare uploaded images with the existing database.
- Notify authorities and families upon a successful match.

### **4. Crowdsourced Reporting and Feedback Loop:**

- Enable users to submit reports and provide updates.
- Allow real-time tracking of reported sightings.

## 10. REFERENCES

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