

Image based Tracking for Missing Person through Mobile Application

Vandana C. Bagal.

K.K.Wagh Institute of Engineering Education and Research
Hirabai Haridas Vidyanagri, Amrutdham, Panchavati, Nashik, Maharashtra, India
vanbagal@rediffmail.com

Ajinkya S. Aher

K.K.Wagh Institute of Engineering Education and Research
Hirabai Haridas Vidyanagri, Amrutdham, Panchavati, Nashik, Maharashtra, India
ajinkya446@gmail.com

Abstract

There are number of systems available for tracking the position of a vehicle but there is less research on tracking the humans. The human face plays an important role in our social interaction, conveying people's identity. This paper describes monitoring and tracking of missing person through its image. The work can also be outlined as an AI based biometric application which finds a person by detecting the person's facial features. This System is used to find the missing person and track them in android app. Face recognition is a task that humans perform routinely and effortlessly in their daily lives. It's a scheme that is used on android mobile for capturing images and uploads that into application, getting result on basis of their image. According to statistics, average 884 people go missing from metropolitan city every month. Though the responsibility of tracking those lies with the police, but our application will help even a common person be a part of the search. The proposed approach will also be location specific and user friendly. This system helps to find the missing people by their captured image in android app and also track their real time location.

Keywords: Android Studio IDE (3.5.3 latest), Postman API Tool, Sublime text 3 Editor, MySQL, XML, Java, Maven, Gradle.

1. Introduction

Face recognition compares the facial image and unique features. Google face API provides face detection and not face recognition. The process behind image based detection is that it automatically identifies human faces in visual media application. Mobile technology comes to the aid for both losses and finds. Mobility and flexibility allow people to react faster; moreover it is an incredibly convenient way to solve such problems. The proposed application will be a platform or a small initiative to stop this count from rising and will also aim at helping people. The proposed approach will also be location specific and user friendly. Concerned authorities will be involved in case of missing people. The proposed application offers unique benefits for those who have lost anything. To make task of finding missing person easy we developed an android application. This application finds lost person within minimum time period. This system uses android mobile for capturing images and upload that into application, getting result on basis of face detection. We are using SWF-sift algorithm for comparing two images, the system ensures that 70-80 % result on basis of compared images. We are using four modules user, police, compliant holder, admin for getting appropriate result. Admin continuously updates database and deletes unnecessary data. The proposed system helps to find out particular person in minimum time and hard-work.

The scope of the proposed system is to find missing person. In case of lost belongings the user can only register complaints of predefined objects such as documents, electronic appliances etc. It is a newer and better approach which involves finding lost objects using location specific details. The proposed system will be mainly used by police stations to get the lost objects their appropriate owners. Along with the police department it will also be used by certain NGO's who put efforts to find missing children and reunite them with their families.

1. When a user opens the application for the very first a sign up page will appear where he/she has to create an account using the phone number, after entering the information an OTP will be sent for secure communication and authentication.
2. Once the user is done with all the prerequisite steps he is then able to upload a found object or person or register a complaint for any of the above. For this two separate modules are provided for the ease of user.

A. Registering a complaint for lost object or person once the user logs into his account he will be able to see two modules on the home screen out of which one will be objects and the other one will be person. He then must select the appropriate section where he will find option saying register a complaint. Ongoing that screen the user will be able to register a complaint after providing all the necessary information related to that particular object or person.

B. Reporting a found item or person. Once the user logs into his account he will be able to see two modules on the home screen out of which one will be objects and the other one will be person. He then must select the appropriate section where he will find option saying report a found a person or object.

2. Review of Related Studies

Global System for Mobile Communication (GSM) tracking system is alike GPS system which can be used for providing real time location and reporting of person. This system works as the person having the tracker which is having GPS Technology, GSM technology and battery which is compatible for this system. The SIM with GPRS enabled facility from that the person who wants to their persons will be able to see on Google earth live moving with the help of GPS technology and GSM Technology. The system uses the information with the help of GPS and GSM Modem and also having SIM with GPRS facility [6]

1. Missingx-

Missingx is the world's largest, database of lost and found property, partnered with travel companies in many major travel destinations across the world, helping to reunite a large number of lost items with their owners. Looking after your bags while travelling, can be one of your biggest worries. The internal messaging system keeps your identity details secure unless and until you wish to share contact details. You may also advertise a reward for your lost item, or have it featured, to make it more attractive and increase the chances of getting your lost item back. The near me feature shows all registered lost and found items which are close to your current location [1].

2. Lost or found-

Lost or found is an android application for reporting lost, stolen or found items on the following app. you can also search for the lost or found items that are being added by others. It aims to serve as a worldwide online database of lost, stolen, and found items and missing people. This app is not limited for lost or found items only but has an additional feature. It can also be used to report missing people or children that will help those who have lost their loved ones to reunite quickly [1].

3. Paw boost –

This app is available only for Android users. This app is designed to find lost pets. The way to report any lost/found pet is through registration on the given app by entering a photo and any distinguishing detail. The owner is notified once the details match from the lost and found section [1].

Each year approximately 100000 peoples gets lost in a big population country. In some cases lost person gets found easily, but in some critical cases missing persons are never reunited with their relatives. Finding lost person can be difficult task. Also during manual process number of manpower for searching lost person is less. And in some missing person related website they required fir no for upload complaint on their website. The web-database is a system where the web server will store the data in table format where the data are filled in column and other parameters [2].

The currently available manual system for finding missing person have very long procedure and takes more time. More time is require for launching a fir (first information report) in police station. Also time required for finding lost person is more [4].

3. Proposed System

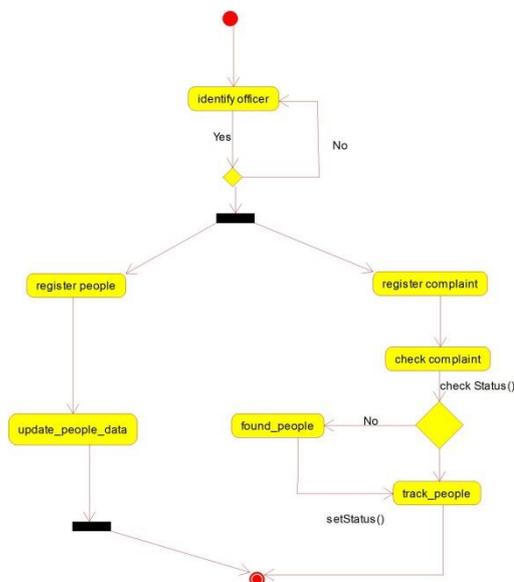
This Missing People Tracking System helps to find the missing people and track them from various location on the application. Also to avoid the lengthy process of complaint registration and the process for missing people finding. In this system there are two modules peoples and the officer. Officer can register the unique card and also the missing people complaints with their prior details and the complaints are visible to both of the application and by analysing the photo image people tells/submit the found people data in this application. Then officer need to approve the found people data from the lost then after people can check the location.

Methodology

The scope of the proposed system is to find missing person. In case of lost belongings the people can not only register complaints but also peoples can check the registered complaints in the application so they can tell where the person is and track that persons location on map. It is a newer and better approach which involves finding lost objects using location specific details. The proposed system will be mainly used by officer to get the lost people. Officer can track the directions and the location of missing people where the people found them.

1. Only Authorized officer login in this application after login officer can sees the options on the dashboard. For Registering person unique card so officer can register the data of specific person for using the application and also to authorized the permission to access the application for finding the missing people.
2. Then after officer can register the complaints of missing people and in this complaint registration there is all detail about the missing person like phone, address where he lost, parent info, date of lost and one photo image for identifying the person.
3. Then Officer can update the data of unique card generated people like address, contact, and email, etc.
4. Like Officer can see the found people complaint list then after he has the facility to contact the person who found the missing person then after officer can approve the found people data and then he is eligible for getting the direction of missing person and track the person for reaching to him.
5. In peoples app People Can check complaints and also people has the facility to check the people nearby missing people and also update the data of the unique card that he/she registers

4. Architecture of the System



This system consist of two app- people app and officer app.

People App

1. People can login by their credentials . This credential contains their unique card id and there password at the time of registering it on officer’s app:
- Enter the card ID and password in the textbox then click on the login button for login
2. After login people can update their contact details:
-After login user can see the home screen and below the bottom bar user can update data option .
3. Then people can see the complaints of missing people who is lost currently.
-For checking the complaint on home screen (Dashboard) there is complaint tab.
4. Also user can search the unique card details by entering the card ID in search bar.
-on the below bottom bar search data is also there so user click on it then enter name, id, mobile number then can search the people data who is registered in it.

Officer's App

1. People can login by their credentials. This credential contains their unique card id and there password at the time of registering it on officer's app. Enter the card ID and password in the textbox then click on the login button for login.
2. After login people can update their contact details .
-After login the home screen and update data is visible
3. Then people can see the complaints of missing people who is lost currently.
-User can check the complaint on home screen (Dashboard).
4. Also people can search the unique card details by entering the card ID in search bar.



Fig. Login And Sign Screen for Officer.

Login and Registration:

Officer can generate his/her credential by filling the registration form then after he/she can be eligible for use the application.

Home Page:

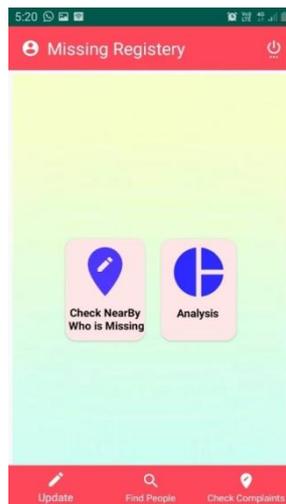
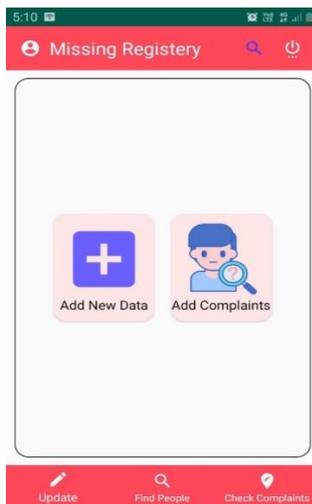
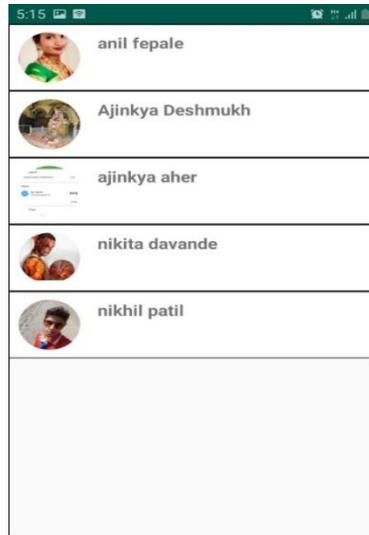


Fig – Officer's Dashboard

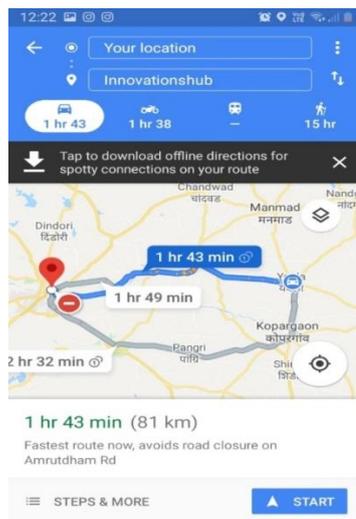
People's Dashboard

Complaints:

Complaints will be visible by just clicking on complaints section on bottom navigation in dashboard



Then After Officer can track the location by just clicking on the list of complaints.



Conclusion:

This tracking application can help in finding lost person with great efficiency and comfort. Also it can provide leads to government bodies like police department who work immensely on finding missing people. Search location feature will enable these bodies as well as the users to locate their lost objects found in different localities. This system ensures 80% result on the basis of compared images.

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