

# Missing Person Identification System

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**Abstract:** *One main objective of the project is to develop a missing youngster (people) realize application that may be useful for the folk whose beloved ones are kidnapped lost, or saved by the folks. In this Finding Missing folk's exploitation website we offer person with entire information base of the missing youngsters, in order that the police will track regarding the whereabouts or file a case relating the difficulty. And the youngsters found (known or unknown) details are uploaded by the police or by AN appointed agent. Entering details of the kids like height, age, etc. could be a protracted method and also the search output. Being out of touch with a loved one is concerning and not hearing from someone you care about is terrifying. Several cases of missing people have been reported for many years, where most of the searches turn out unsuccessful. In order to quickly reunite families and friends with their missing loved ones, a solution for effectively searching for the missing people is presented. Persons more easily and quickly. Missing person identification and tracking for intelligent video surveillance systems. Due to some reason the people leave the home or some child or old man's forget the route of home to this missing case entry is updated in police station by using CCTV camera technology compare the each person with the available database and find these people. To improve this system concept system is designed. In this system designed to find the missing people. If the missing person found in the CCTV Video streaming then track the location of missing person. After missing person found in the CCTV Video streaming then send location SMS to relatives of missing person and Police station. So our system can perform the very important role in security and authentication issues. The user performs the main role in the system. Firstly he can register in the system, after the registration he can login to the system. User also adds the missing person details in the system. If missing person found in video then user can send SMS to the police station and also to person's relatives. Here the admin perform the all administrative role in this system. Admin can add the user, remove the user etc. After getting the user's result admin can view those details.*

**Keywords:** Facial Recognition, Image Processing, Raspbian, Libre ELEC OSMC

## I. INTRODUCTION

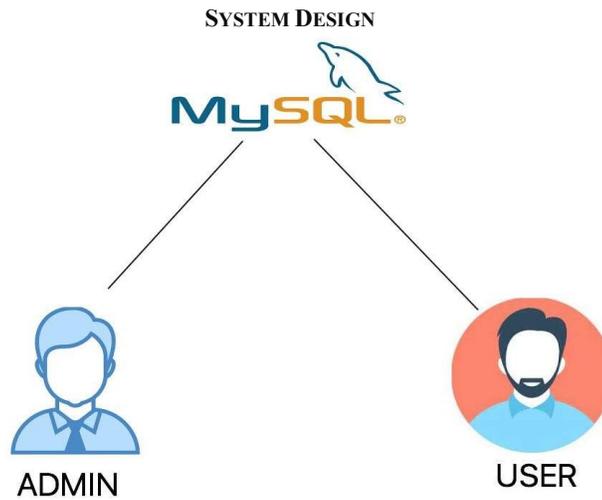
Reports of missing persons worldwide have increased significantly in the past recent years, from roughly 450,000 in 1990 to about 10,000,000 this year. The increase was driven in part by the ever growing population. The numbers indicate that more people are becoming victims each day. An astounding 2,300 Americans are reported missing every day, including both adults and children. Kenya on the other hand has at least 20,000 missing people on record every year. Out of the reported number, 40% are located after a long period of search while 30% are left untraced. Only 30% of the reported victims are found within a reasonably short period of up to 3 months. More recently, the abductions of children and adults have reawakened public concern about missing people. In most parts of the world, the police and non-governmental organizations working with missing people have recently reviewed their policies and are planning to improve coordination of their work. People end up missing in different scenarios. The circumstances that may lead adults or children to become missing people are often complex and multi-layered. The missing phenomenon is best understood as a continuum in which a break in contact may be either intentional or unintentional. Some people make a conscious decision to leave, albeit often not in circumstances of their own choosing, while others may drift apart from family members over time. Some may never have intended to be missing, and indeed may not conceptualize their experience in these terms, while others may be forced apart through the actions of others. Some of the causes entailed herein are natural disasters, psychological complications, abduction and domestic conflicts.

**1.1 Detailed Problem Definition**

Every day more than five hundred missing person complaints are approximated to go unanswered in India. The objective of this project is to help Police and higher authorities to track down missing people quickly.

**II. LITERATURE SURVEY**

S no.	1
Author and Title	Aniruddha Dey, "A Contour based Procedure for Face Detection and Tracking from Video " 3rd Int'l Conf. on Recent Advances in Information Technology I RAIT-20161
Proposed System	In this paper primary goal is to recognize location of faces from video. Moreover, finding face motion leads to be a part of face recognition system. Firstly, face edges are detected using Robert edge detector followed by a set of arithmetic operations between an initial frame and the nearest ones. Thereafter, non-desired edges and noise are removed by Gaussian filtering technique. A logical operation is then performed between the previous two output frames and noiseless face contour frame for detecting edges corresponding to face video. Finally, four corner points i.e. topleft, top-right, bottom-left, bottom-right is computed to draw rectangle around the face and detect face contour of each frame. To track human face from video, scalar and vector distance between four corner points of two consecutive frames are calculated. Displacement of corner points means position and location of face changes in the next frame
For this paper we referred	Referred following techniques: 1. Face Detection 2. Moving Face Contour Detection 3. Face Tracking
Sr. No	2
Author and Title	Andreas Ess, Bastian Leibe, Konrad Schindler, Luc Van Gool, "A Mobile Vision System for Robust Multi-Person Tracking " 978-1-4244-2243-2/08/\$25.00 ©2008 IEEE
Proposed System	Propose a way to closely integrate the vision modules for visual odometer, pedestrian detection, depth estimation, and tracking. The integration naturally leads to several cognitive feedback loops between the modules. Among others, we propose a novel feedback connection from the object detector to visual odometry which utilizes the semantic knowledge of detection to stabilize localization. Feedback loops always carry the danger that erroneous feedback from one module is amplified and causes the entire system to become instable. We therefore incorporate automatic failure detection and recovery, allowing the system to continue when a module becomes unreliable. The approach is experimentally evaluated on several long and difficult video sequences from busy inner-city locations. Our results show that the proposed integration makes it possible to deliver stable tracking performance in scenes of previously infeasible complexity.
For this paper we referred	Object or multi-person tracking-by-detection with additional depth information.
Sr no.	3
Author and Title	Rolf H. Baxter, Michael J. V. Leach, Sankha S. Mukherjee, and Neil M. Robertson, "An Adaptive Motion Model for Person Tracking with Instantaneous Head-Pose Features" IEEE SIGNAL PROCESSING LETTERS, VOL. 22, NO. 5, MAY 2015
Proposed System	It presents novel behavior based tracking of people in low-resolution using instantaneous prior mediated by head- pose. We extend the Kalman Filter to adaptively combine motion information with an instantaneous prior belief about where the person will go based on where they are currently looking. We apply this new method to pedestrian surveillance, using automatically derived head pose estimates, although the theory is not limited to head-pose priors
For this paper We referred	Intentional tracker could significantly outperform the standard KF on both video and synthetic datasets containing sudden changes in behavior.

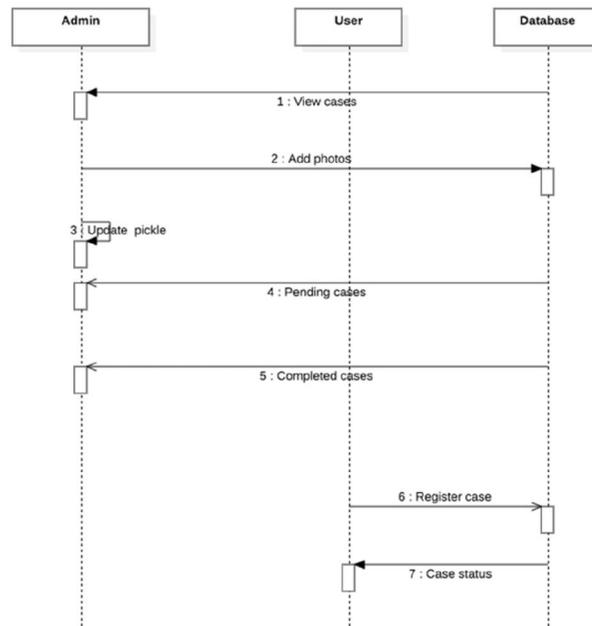


### 2.1 System Architecture

- The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data, and the output data is generated by this system.
- The data flow diagram (DFD) is one of the most important modeling tools. It is used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.
- DFD shows how the information moves through the system and how it is modified by a series of transformations. It is a graphical technique that depicts information flow and the transformations that are applied as data moves from input to output.

DFD is also known as bubble chart. A DFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that represent increasing information flow and functional detail.

### 2.2 Sequence Diagram

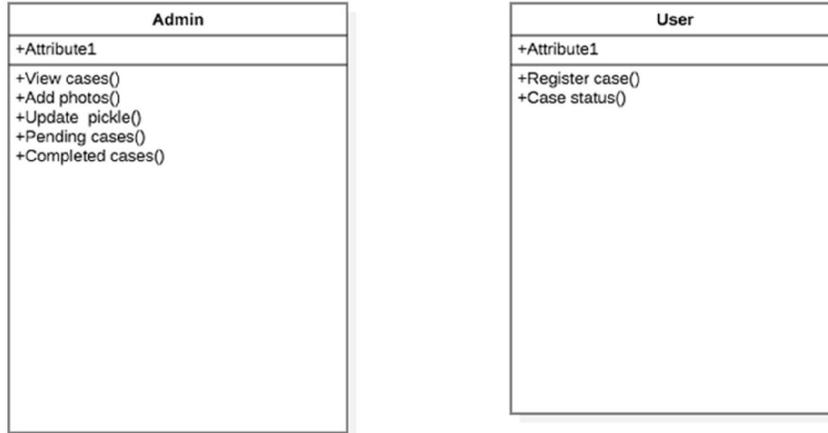




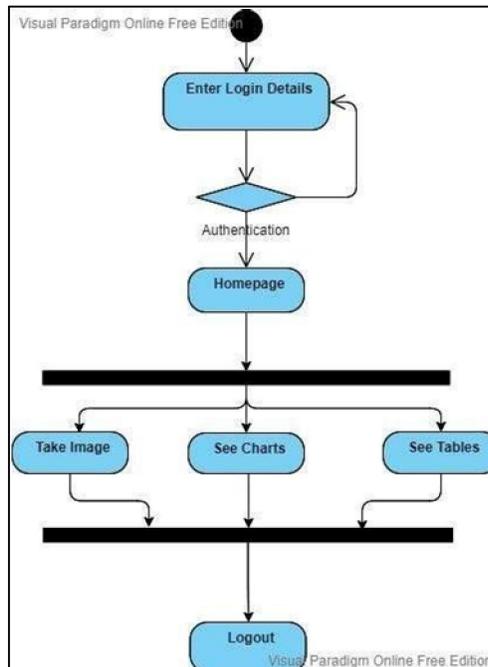
A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.

2.3 Class Diagram

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.



2.4 Activity Diagram



- Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency.
- In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.

**METHODOLOGY**

**3.1 Modules**

- Admin
- User
- Police
- Volunteer

**A. Admin**

Admin login with user name and password, the entered username and password is correct then only admin enter into home page. After entered into home page admin add the police details based on entered details police get an email. Add the missing people details and view the added people details, if any user make a complaint admin can view all complaint details based on complaint admin check the missing people details available in added missing peoples details if details found admin close the complaint. And admin view the volunteer founded children's also.

**B. User**

User first need to register for accessing the application, after registration user login with the username password, entered username and password is correct then only entered into home page. After login user make complaint based on complaint if any police send the queries user answer to the queries. User get updates on his complaint and if missing people found user can change the status of complaint.

**C. Police**

Police login with user name and password, the entered username and password is correct then only Police enter into home page. After entered into home page Police view the all admin added missing peoples, volunteer added peoples and view user complaints based complaint police have any queries send queries to user based on complaint user change the status of the complaint.

**D. Volunteer**

Volunteer first need to register for accessing the application, after registration Volunteer login with the username password, entered username and password is correct then only entered into home page. After login Volunteer add the founded peoples only.

**IV. INPUT DESIGN AND OUTPUT DESIGN**

**4.1 Input Design**

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

**4.2 Objectives**

- Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

- It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.
- When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

#### **4.3 Output Design**

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

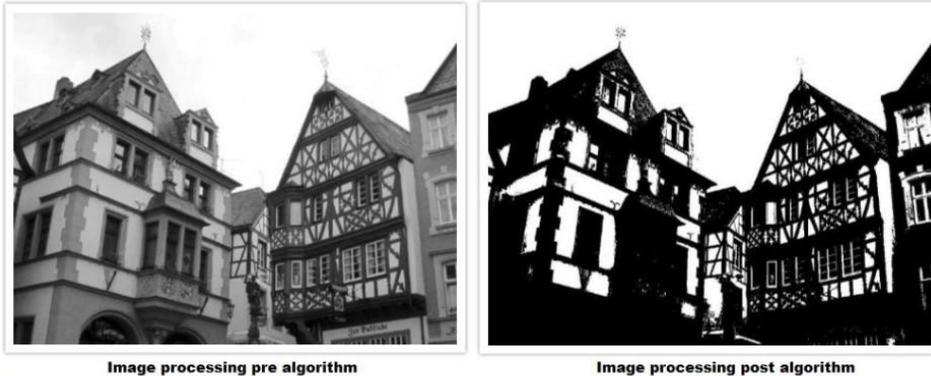
1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.
2. Select methods for presenting information.
3. Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- Convey information about past activities, current status or projections of the future.
- Signal important events, opportunities, problems, or warnings.
- Trigger an action.
- Confirm an action.

#### **V. ALGORITHM**

- Here we develop a web application which uses image processing technology.
- In this application the user have to register the case by providing the details of missing person along with photocopy of the missing person.
- Using the image processing model we will be comparing the image provided by the user and the image footage extracted by the cctv camera.
- Here we will be taking the help of cctv footage of humans dataset to train the model which we got on the Kaggle platform.
- Till now, we have read about Image processing being a technique to carry out a particular set of actions on an image for obtaining an enhanced image or extracting some valuable information from it. The input is an image, and output may be an improved image or characteristics/features associated with the same.
- It is essential to know that computer algorithms have the most significant role in digital image processing. Developers have been using and implementing multiple algorithms to solve various tasks, which include digital image detection, image analysis, image reconstruction, image restoration, image enhancement, image data compression, spectral image estimation, and image estimation. Sometimes, the algorithms can be straight off the book or a more customized amalgamated version of several algorithm functions.
- Image processing algorithms commonly used for complete image capture can be categorized into:
- Low-level techniques, such as color enhancement and noise removal,
- Medium-level techniques, such as compression and binarization, and higher-level techniques involving segmentation, detection, and recognition algorithms extract semantic information from the captured data.



In an image, most of the image is non-face region. So it is a better idea to have a simple method to check if a window is not a face region. If it is not, discard it in a single shot, and don't process it again. Instead, focus on regions where there can be a face. This way, we spend more time checking possible face regions.

For this they introduced the concept of Cascade of Classifiers. Instead of applying all 6000 features on a window, the features are grouped into different stages of classifiers and applied one-by-one. (Normally the first few stages will contain very many fewer features). If a window fails the first stage, discard it. We don't consider the remaining features on it. If it passes, apply the second stage of features and continue the process. The window which passes all stages is a face region.

#### VI. CONCLUSION

The proposed method gives better results as compared to the existing method. The existing method gives 97 hits while the proposed method gives 98 hits. The existing method gives 3 misses and proposed method gives 2 misses. As a result of this hit ratio of proposed method is more as compared to that of existing method.

#### REFERENCES

- [1]. Paulides, D. (2014). The missing cases:411 Series. 1st ed. New York: International Publishers.
- [2]. Smith, W. (2000). Review of national missing persons agencies. Compass Partnership.
- [3]. Nina, A. and Fiona, D. (2011). Handbook to Practical Disaster Preparedness for the Family. 2nd ed. London: Create Space Independent Publishing Platform
- [4]. Skinner, R. (2010). The missing link to missing people. 1st ed. New York: HarperCollins Publishers.
- [5]. Lundin, C. (2007). When All Hell Breaks Loose: Stuff You Need To Survive When Disaster Strikes. 1st ed. London: Gibbs Smith.
- [6]. Damon, P. (2006). Introduction to International Disaster Management. 1st ed. London: Butterworth-Heinemann.
- [7]. Andy, C. (2010). Using Google's Haiti Missing Persons Widget, National Public Radio.
- [8]. Samarajiva, R. (2005). National Early Warning System.LIRNEasia, [Online]. 2, 2. Available at:<http://lirneasia.net/2005/03/national-early-warningsystem/>[Accessed 03 July 2014].
- [9]. Acharya, M. (2005). Amateur Radio, A potential tool in emergency operations. 1st ed. New Delhi: A.P.H. Publishing Corporation. [10] Levinson, J. and Domb, A. (2013). Disaster Victim Identification & Privacy. 1st ed. Jerusalem: -The Hebrew University of Jerusalem.
- [10]. Creswell, J.W. (2003). Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 2nd Ed, And London: Sage Publications.
- [11]. David M, (2011). Evaluation: From Precision, Recall and F-Measure to ROC, Unforcedness, Nakedness & Correlation. Journal of Machine Learning Technologies. 2 (1), 37–63.
- [12]. Bryman, A. (2008). Social Research Methods, 3rd Ed, Oxford: Oxford University Press