SAVITRIBAI PHULE PUNE UNIVERSITY

A PRELIMINARY PROJECT REPORT

ON

SMART SYSTEM FOR PERSON RECOGINTION

SUBMITTED TOWARDS THE PARTIAL FULFILLMENT OF THE REQUIREMENTS OF BACHELOR OF ENGINEERING

(COMPUTER ENGINEERING)

BY

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(2015-16)

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CERTIFICATE

This is to certify that the Project Entitled

SMART SYSTEM FOR PERSON RECOGINTION

submitted by

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is a bonafide work carried out by Students under the supervision of Prof. P.Nimbalakar and it is submitted towards the partial fulfillment of the requirement of Bachelor of Engineering (Computer Engineering) Project.

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Abstract

In this paper, We are going to see a very smart system for recognizing persons in various conditions. This paper, proposes a recognition system by using different algorithm techniques. We are using R-Cascade, PCA (Principle Component Analysis), FJ-RC4 algorithms for building this system. The main goal of this system is to identify criminal in various places. Most probably we use this system in public places where we can monitor and identify criminal background persons. This system is helpful for police and security agencies.

Acknowledgement

It gives us great pleasure in presenting the preliminary project report on **SMART SYSTEM FOR PERSON RECOGINTION**.

I would like to take this opportunity to thank my internal guide Prof. P.Nimbalkar for giving me all the help and guidance I needed. I am really grateful to them for their kind support. Their valuable suggestions were very helpful.

I am also grateful to Prof. S.R.Todmal, Head of Computer Engineering Department, JSPM's IMPERIAL COLLEGE OF ENGINEERING AND RESEARCH for his indispensable support, suggestions.

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Abstract

In this paper, We are going to see a very smart system for recognizing persons in various conditions. This paper, proposes a recognition system by using different algorithm techniques. We are using R-Cascade, PCA (Principle Component Analysis), FJ-RC4 algorithms for building this system. The main goal of this system is to identify criminal in various places. Most probably we use this system in public places where we can monitor and identify criminal background persons. This system is helpful for police and security agencies.

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SMART SYSTEM FOR PERSON RECOGINTION

1.2 INTERNAL GUIDE

Prof.Pravin Nimbalkar

1.3 PROBLEM STATEMENT

SMART SYSTEM FOR PERSON RECOGINTION

1.4 ABSTRACT

In this paper, We are going to see a very smart system for recognizing persons in various conditions. This paper, proposes a recognition system by using different algorithm techniques. We are using R-Cascade, PCA (Principle Component Analysis), FJ-RC4 algorithms for building this system. The main goal of this system

is to identify criminal in various places. Most probably we use this system in public places where we can monitor and identify criminal background persons. This system is helpful for police and security agencies.

1.5 GOALS AND OBJECTIVES

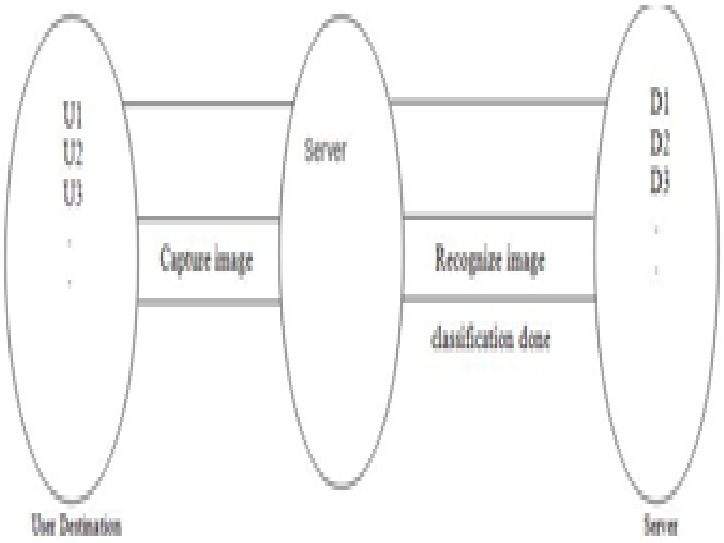
1.To develop the hardware and software system as a product which will help human beings for person recognition. 2.To compare the accuracy of the algorithms and use the proper algorithm to accurately provide predictions. 3.To study and correlate the person recognition algorithm 4.To verify the accuracy of prediction with experts and practitioners for validity of results

1.6 RELEVANT MATHEMATICS ASSOCIATED WITH THE PROJECT

Module 1) capture image send File To system Let S1 be a set of parameters for Selecting File S1= Image Size ,Image Upload Uploading File data rate:- R=((N-NP) S/L)/N=S/L where, R is Binary data rate, N is Size of file, NP is size of data which carries the parameters, S is Small positive integer and L is size of binary data in file data. Where, Image Size = Actual size of file Image Type = Type of File If imagetype is valid then proceed Else discard operation

2) Image classification Let s S2 be a set of data S2=Image Size Where, Image Size = Actual size of Data If Data size is less than or equal to KB(Kilo Bytes) then only proceed Else data is not accepted Venn Diagrams :- Let M be the Mathematical Model which Consists Of User set, Server And Destination Set M=0 U, S, D; U = U1, U2 , —– , Un —Set of users S - Server D- D1, D2, D3, —-, DnDestination

Let U1, U2, U3, Un be the set of capture images and then they Upload the image and send to the Destination with image . Let D1,D2, D3, . Dn be the set of Destination where image is store, and after only recognition attendance is increment.



And S- Be the server, If the image is recognized then server will verify and update in database.

1.6.1 System Description:

The designed system is used to transmit information about criminals which are identified by police criminal database. Criminal database is available in police headquarters and we are using that database for recognizing criminals. In this system we make some modules which are well compacted in a software. IR cameras placed in hotels, lodges are managed by DVR system and this DVR system can be access through internet anywhere anytime. So, at server side means in headquarters we make a web application and by using this web application we fetch live recording of IR cameras and matches this recording with criminal database which is already exists on server application. If any person matches with the database then an alert is generated at server end and then criminal can be grabbed quite simply.

input:To captured images

Output:Person Recognition

Identify data structures, classes, divide and conquer strategies to exploit distributed/ parallel/concurrent processing, constraints:

1.7 PLAN OF PROJECT EXECUTION

A smart system for person recognition which is a best solution for criminal identification. By using this system security agencies and policemens working will be somehow simplify. The successful solution for person recognition is achieved by this system.

1.8 NAMES OF CONFERENCES / JOURNALS WHERE PAPERS CAN BE PUBLISHED:

International Journal of Advanced Research in Computer Science and Software Engineering

1.9 REVIEW OF CONFERENCE/JOURNAL PAPERS SUPPORTING PROJECT IDEA

Title: Smart System for Person Recognition
Paper ID: V5I9-0323

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Chapter 2

TECHNICAL KEYWORDS

2.1 AREA OF PROJECT

Image Processing by Artifical Intelligence

2.2 TECHNICAL KEYWORDS

Criminal identification, FJ-RC4, IR Cameras, PCA, Haar Cascade.

1. C. Computer Systems Organization(a) C.2 COMPUTER-COMMUNICATION NETWORKS

i. C.2.4 Distributed Systems

A. Client/server

B. Distributed applications

C. Distributed databases

D. Network operating systems

E. Distributed file systems

F. Security and reliability issues in distributed applications

Chapter 3

INTRODUCTION

3.1 PROJECT IDEA

In this digital world as everywhere computerized systems are working, we are taken initiative to help the security systems and policemens for grabbing the criminals and criminal background persons. Smart System Person Recognition system is the improvement that has taken place in field of identifying and locating criminals in such public places like hotels, lodges, airports etc.

3.2 MOTIVATION OF THE PROJECT

1.To compare the accuracy of the algorithms and use the proper algorithm to accurately provide predictions.

2.To study and correlate the person recognition algorithm.

3.To develop the hardware and software system as a product which will help human beings for person recognition.

4.To verify the accuracy of prediction with experts and practitioners for validity of results

3.3 LITERATURE SURVEY

Sr .No.	Title	Publication Year	Author name	Limitation	How to Overcome
1	"Student Attendance Using RFID System"	2012	Mahyidin	Still not efficient enough for very large datasets, and in this the RFID technic is used.	By using IR Cameras
2	Student class attendance registerusing radio frequency identification	2003	Gatsheni, B.N., R.B. Kuriakose	Students to place their finger on the sensor during the lecture time without the instructor's intervention.	Approach is that passing of the device during the lecture time.
3	Rendering Novel Views of faces Using Disparity Estimation.	2000/2001	Chuo Ling Chang, Edward Li, Zhifei Wen	Capturing the faces of Person and identifies the person.	Iris is the another bio-metric that can be used for Attendance Systems.

Chapter 4

PROBLEM DEFINITION AND SCOPE

4.1 PROBLEM STATEMENT

SMART SYSTEM FOR PERSON RECOGINTION

4.1.1 Goals and objectives

1.To develop the hardware and software system as a product which will help human beings at the stage of depression.

2.To compare the accuracy of the algorithms and use the proper algorithm to accurately provide predictions.

3.To study and correlate the person Recognition.

4.To verify the accuracy of prediction with experts and practitioners for validity of results.

4.1.2 Statement of scope

The scope identifies what the product is and is not, what it will and wont do, what it will and wont contain

4.2 SOFTWARE CONTEXT

The business or product line context or application of the software is to be given

4.3 MAJOR CONSTRAINTS

Any constraints that will impact the manner in which the software is to be specified, designed, implemented or tested are noted here.

4.4 METHODOLOGIES OF PROBLEM SOLVING AND EFFICIENCY ISSUES

The single problem can be solved by different solutions. This considers the performance parameters for each approach. Thus considers the efficiency issues.

4.5 SCENARIO IN WHICH MULTI-CORE, EMBEDDED AND DISTRIBUTED COMPUTING USED

4.6 OUTCOME

The suitable remedy will be given to the diagnosed psychologically depressed patient.

4.7 APPLICATIONS

1.Security Organization.

2.Hospitals.

3.Hotels.

4.Police stations.

4.8 HARDWARE RESOURCES REQUIRED

H/W System Configuration:-Processor : Pentium IV 2.4 GHz, Intel core I3

Camera : IR Camera

Speed : 1.1 Ghz

RAM : 512 MB

Hard Disk : 20 GB

Floppy Drive : 1.44 MB

Key Board : Standard Windows Keyboard

Mouse : Two or Three Button Mouse

4.9 SOFTWARE RESOURCES REQUIRED

Platform :

Operating System : Microsoft Windows XP/7/8

Platform : JAVA(JDK 1.7.0/1.8.0)

Front End : JAVA

Back End / Database : MySQL

Database Connectivity : JDBC.

2.IDE:Eclipse,.NET Framework,ADT.

3.Programming Language: JAVA.

Chapter 5

PROJECT PLAN

5.1 PROJECT ESTIMATES

5.1.1 Reconciled Estimates

40000/- INR

5.1.2 Cost Estimate

Approx 40000/- INR

5.1.3 Time Estimates

1 month

5.1.4 Project Resources

Neuro Sensors

Patient

Patients medical databasereal time taken from hospital.

Appropriate therapy details

5.1.5 RISK MANAGEMENT W.R.T. NP HARD ANALYSIS

This project doesnt deals with the any more time taking factors. So, it will be a risk free project when it is considered as NP-Hard issue. Rather, the project will be in a NP Class .

5.2 Risk Identification

1.Have top software and customer managers formally committed to support the project? :No. But, we will take help from the doctors.

2.Are end-users enthusiastically committed to the project and the system/product to be built? : Yes

3.Are requirements fully understood by the software engineering team and its customers? : Not fully now, practically its partially understood.

4.Have customers been involved fully in the definition of requirements? : Yes

5.Do end-users have realistic expectations? : Yes

6.Does the software engineering team have the right mix of skills? : Yes

7.Are project requirements stable? : Yes

8.Is the number of people on the project team adequate to do the job? : Yes

9.Do all customer/user constituencies agree on the importance of the project and on the requirements for the system/product to be built? : Yes.

5.2.1 Cost Estimate

5.2.2 Time Estimates

5.3 Project Resources

Project resources [People, Hardware, Software, Tools and other resources] based on Memory Sharing, IPC, and Concurrency derived using appendices to be referred.

5.4 RISK MANAGEMENT W.R.T. NP HARD ANALYSIS

This section discusses Project risks and the approach to managing them.

Risk Identification

For risks identification, review of scope document, requirements specifications and schedule is done. Answers to questionnaire revealed some risks. Each risk is categorized as per the categories mentioned in [1]. Please refer table 5.1 for all the risks. You can refereed following risk identification questionnaire.

1. Have top software and customer managers formally committed to support the project?

2. Are end-users enthusiastically committed to the project and the system/product to be built?

3. Are requirements fully understood by the software engineering team and its customers?

4. Have customers been involved fully in the definition of requirements?

5. Do end-users have realistic expectations?

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6. Does the software engineering team have the right mix of skills?

7. Are project requirements stable?

8. Is the number of people on the project team adequate to do the job?

9. Do all customer/user constituencies agree on the importance of the project and on the requirements for the system/product to be built?

5.5 PROJECT SCHEDULE

Project task set

Major Tasks in the Project stages are:

Task network

Project tasks and their dependencies are noted in this diagrammatic form.

Timeline Chart

A project timeline chart is presented. This may include a time line for the entire project. Above points should be covered in Project Planner as Annex C and you can mention here Please refer Annex C for the planner

5.6 TEAM ORGANIZATION

The manner in which staff is organized and the mechanisms for reporting are noted

Team structure

The team structure for the project is identified. Roles are defined.

Management reporting and communication

Chapter 6

SOFTWARE REQUIREMENT SPECIFICATION(SRS IS TO BE PREPARED USING RELEVANT MATHEMATICS DERIVED AND SOFTWARE ENGG. INDICATORS IN ANNEX A AND B)

6.1 INTRODUCTION

Purpose and Scope of Document

To increase the accuracy of Smart system for person recongition which is suitable for criminals identification.

6.2 USAGE SCENARIO

This section provides various usage scenarios for the system to be developed.

User profiles

The profiles of all user categories are described here.(Actors and their Description)

[1]It is very comfortable to user for access.

[2]Capturing the image by IR camera and send towards the server.

[3]It can be useful within few seconds and decreases the human efforts.

Chapter 7

DETAILED DESIGN DOCUMENT USING APPENDIX A AND B

7.1 INTRODUCTION

In this paper, using Haar-cascade, PCA and FJ-RC4 algorithms we are proposing a smart system interface for person recognition. By using IR cameras we can grab the criminals is our main goal. Criminals can be anywhere anytime , so basically we points towards public places like lodges, hotels etc. Main system is at another side which is a one type of web application and this application takes snaps of IR cameras and then continuously matching these pictures/images with available databases of criminals. If any pictures is matching then a system alert is generated and it will be the indication for Policemens that identified person will be the susceptible one. This system is very helpful and advance for our security agencies. It is also saves time, money, travelling expenses of police vehicles.

7.2 ARCHITECTURAL DESIGN

A description of the program architecture is presented. Subsystem design or Block diagram,Package Diagram,Deployment diagram with description is to be presented.

7.3 DATA DESIGN

Internal software data structure

Data structures that are passed among components the software are described.

Global data structure

Data structured that are available to major portions of the architecture are described.

Temporary data structure

Files created for interim use are described.

Database description

Database Files created/used as part of the application is(are) described.

COMPOENT DESIGN

Class diagrams, Interaction Diagrams, Algorithms. Description of each component description required.

Class Diagram

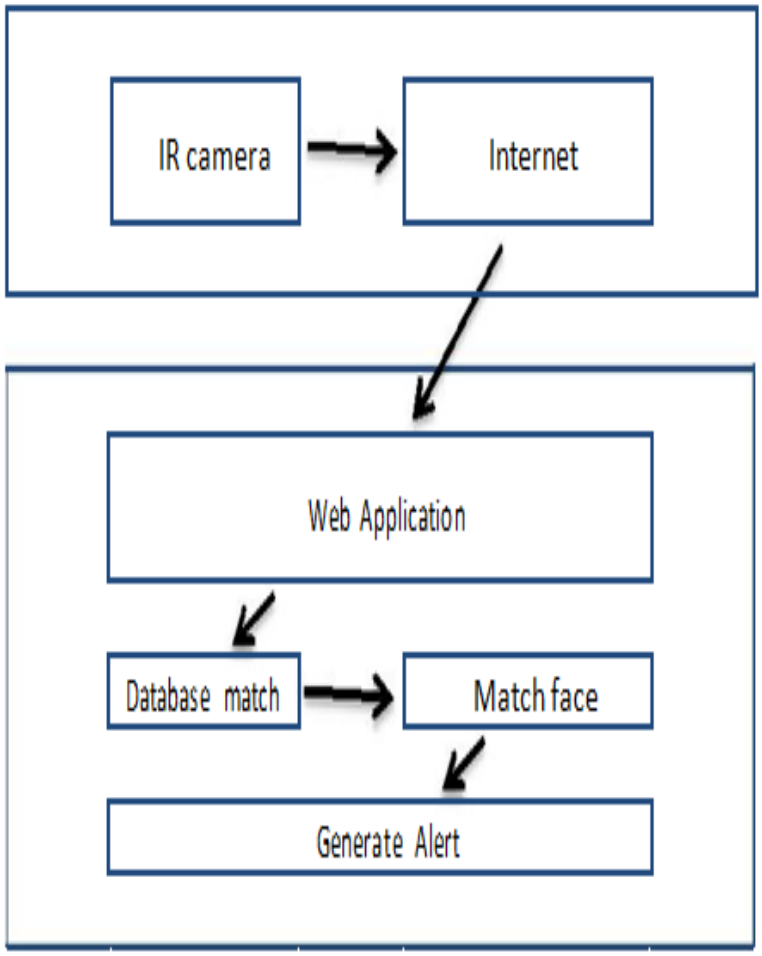

Figure 7.1: System Architecture for Smart System Recognition.

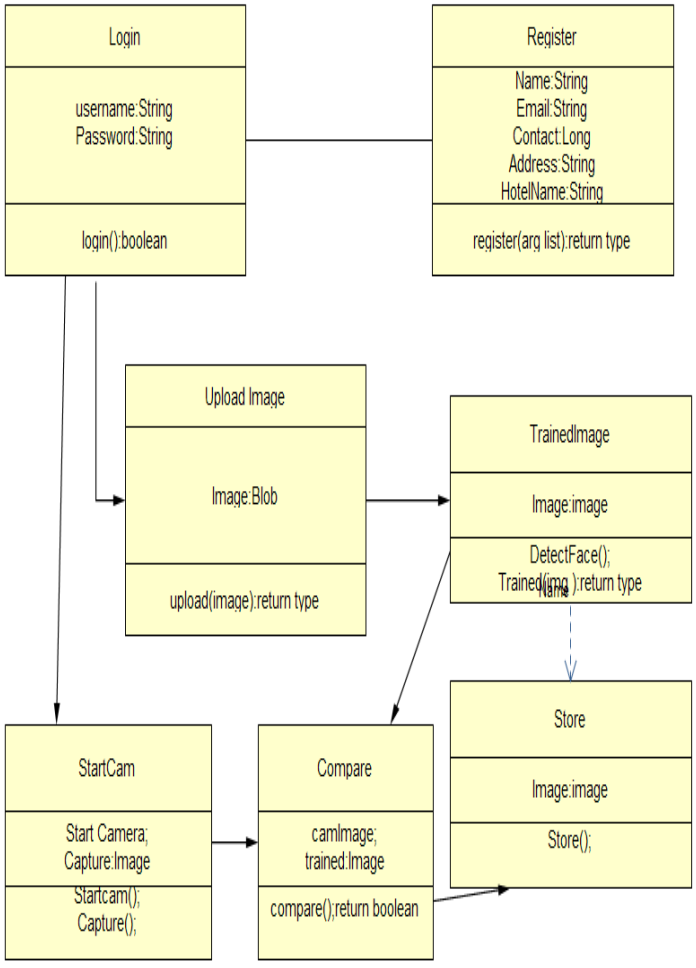

Figure 7.2: Criminal Face Detection Class

Chapter 8

CONCLUSION

This paper presented a smart system for person recognition which is a best solution for criminal identification. By using this system security agencies and policemens working will be somehow simplify. The successful solution for person recognition is achieved by this system. By using this system criminal database is centrally managed and used for systematic identification of criminals.

Chapter 9

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