Prapti

Research Journal

Vol.5 Issue – 2   **DECEMBER 2021**

SMART ATM

Hariprakash.V

Abstract

There is an urgent need for improving security in the banking region. With the advent of ATMs though banking became a lot easier it even became a lot vulnerable. The chances of misuse of this much hyped 'insecure' baby product (ATM) are manifold due to the exponential growth of 'intelligent' criminals day by day. The aim of this project is to design an ATM application system that will combine PIN (Personal Identification Number) verification system with fingerprint biometric system and Face Detection and Recognition for more reliable authentication. This paper proposes the development of a system that integrates Facial recognition and fingerprint scanning technology into the identity verification process used in ATMs. The development of such a system would serve to protect consumers and financial institutions alike from unknown persons and other breaches of security.

1.INTRODUCTION

This application deals with the solutions related to the ATM (Automated Teller Machine) security. Today, ATMs and Credit cards are used for the purpose of money transactions which play a vital role in the nature of trade. The weaknesses of existing authentication schemes such as password and PIN number caused the leakage of information stored in ATM smartcards which lead to the loss of money in bank accounts and private information misuses. To overcome this shortcoming of piracy in money transactions, I propose the idea of using fingerprints and face detection of customers or customer's nominees as passwords included with traditional PINnumbers.

Hariprakash.V,

V-M.Sc.SS, Department of Software Systems

and Computer Science [PG],

KG College of Arts and Science

After authorized verification, the customer will be able to proceed for the transaction; after three successive wrong attempts, the ATM card will be blocked for 24 hours and a message will be sent to theregisteredmobile number. Fingerprint biometric and Face of everyperson is unique and unchangeable as well as one of thefamous techniques for smart card security. The rise of technology in India has brought into force many types of equipment that aim at more customer satisfaction. An ATM is one such machine which makes money transactions easy for customers to bank. The other side of this improvement is the enhancement of the unknown person's probability to get his 'unauthentic' share. Traditionally, security is handled by requiring the combination of a physical access card and a PIN or other password in order to access a customer's account. This model invites fraudulent attempts through stolen cards, badly-chosen or automatically assigned PINs, cards with little or no encryption schemes, employees with access to non-encrypted customer account information and other points of failure Our project proposes an automatic teller machine security model that would combine a physical access card, a PIN, and electronic facial recognition. By forcing the ATM to match a live image of a customer's face with an image stored in a bank database that is associated with the account number, the damage to be caused by stolen cards and

ATM. Just step up to the camera while you

PINs is effectively neutralized.

RELATED WORK :

Security Experts say that Automatic Teller Machines (ATM) in future will have biometric authentication techniques to verify identities of customers during transactions. In South America, there are companies that have introduced fingerprint technology as an embedded part of ATM systems, where citizens have already started using fingerprints in place of PIN or Password for general identification with their ID cards. Gregg Rowley said- "Banks will move to smart cards and biometric will be the next step after that". Banks have already moved to smart cards and now is the time to implement a biometric authentication approach in ATM systems.

Nowadays, there are devices to perform biometric identification and authentication of the following: fingerprint, hand, retina, iris, face, and voice. Rowley says, "Most insecure is a magnetic stripe with a PIN, more secure is a smart card with a PIN, and even more secure is a smart card with biometrics" . India is still lacking in implementing biometric with smart cards as a safety approach. Various ideas are given by researchers for biometric authentication including fingerprint, iris and retina, voice, etc. Fingerprint approach for identification given by Oko S. and Oruh J. (2012) not proved efficient as when citizen will move to ATM system, fingers may become dirty from natural environment and will not be able to access his account with ATM system, since fingerprints will not match from the one that was traced during identification. Secondly, a iris and retina approach proposed by Bhosale S. and Sawant B.(2012) as an identification method, but citizens might not want a laser beamed into their eyes for retina scan everytime they want to access an account through an ATM. Thus, iris and retina as identification authentication proved inefficient. Vibration detector sensors were also proposed as a security system for ATM machines by Ajaykumar M. And Bharath Kumar N.(2013). Voice was also proposed for security in ATM systems as a biometric with smart cards. The cons were there at the same time as two citizens can have the same voice and one can easily hack and can fraud with another's account.

SYSTEM DESIGN AND DEVELOPMENT :

Facial Recognition- The main issues faced in developing such a model are keeping time elapsed in the verification process to a negligible amount, allowing for an appropriate level of variation in a customer's face when compared to the database image, and that credit cards which can be used at ATMs to withdraw funds are generally issued by institutions that do not have in-person contact with the customer, and hence no opportunity to acquire a photo. Because the system would only attempt to match two (and later, a few) discrete images, searching through a large database of possible matching candidates would be unnecessary. The process would effectively become an exercise in pattern matching, which would not require a great deal of time. With appropriate lighting and robust learning software, slight variations could be accounted for in most cases. Further, a positive visual match would cause the live image to be stored in the database so that future transactions would have a broader base from which to compare if the original account image fails to provide a match thereby decreasing false negatives. When a match is made with the PIN but not the images, the bank could limit transactions in a manner agreed upon by the customer when the account was opened, and could store the image of the user for later examination by bank officials. In regards to bank employees gaining access to customer PINs for use in fraudulent transactions, this system would likewise reduce that threat to exposure to the low limit imposed by the bank and agreed to by the customer on visually unverifiable transactions. In the case of credit card use at ATMs, such a verification system would not currently be feasible without creating an overhaul for the entire credit card issuing industry, but it is possible that positive results (read: significant fraud reduction) achieved by this system might motivate such an overhaul. The last consideration is that consumers may be vary of the privacy concerns raised by maintaining images of customers in a bank database, encrypted or

otherwise, due to possible hacking attempts or employee misuse. However, one could argue that having the image compromised by a third party would have far less dire consequences than the account information itself. Furthermore, since nearly all ATMs videotape customers engaging in transactions, it is no broad leap to realize that banks already build an archive of their customer images, even if they are not necessarily grouped with account information .

OpenCV (Open source computer vision) is a library of programming function mainly aimed at real-time computer vision. Originally developed by Intel, it was later supported by Willow Garage then Itseez (which was later acquired by Intel). The library is cross-platform and free for use under the open-source BSD license.

OpenCV supports some models from deep learning frameworks like TensorFlow, Torch, PyTorch(after converting loan ON model)and Caffe according to a defined list of supported layers.

APPLICATIONS:
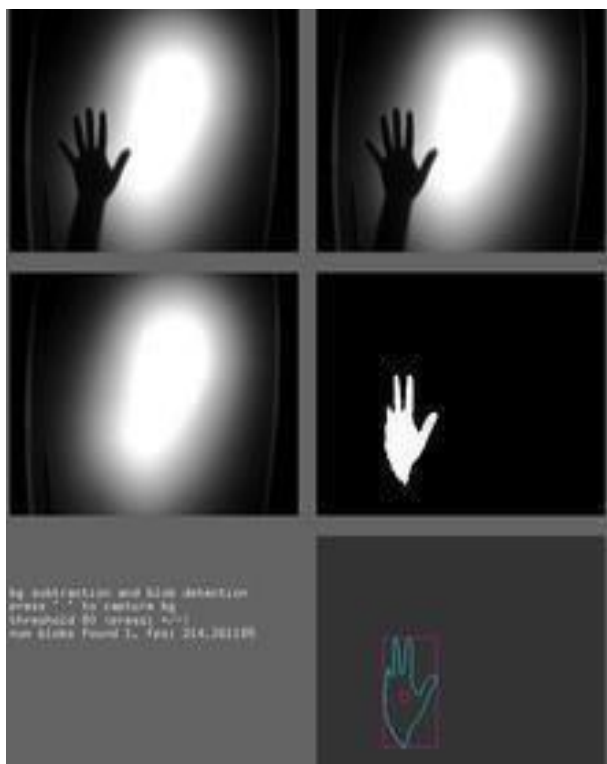

OpenFrameworks running the OpenCV add-on example

OpenCV'sapplication areas include:

- 2D and 3D feature toolkits
- Egomotion estimation
- Facial recognition system

- Gesturerecognition
- Human–computer interaction (HCI)
- Mobile robotics
- Motion understanding
- Object identification
- Segmentation andrecognition
- Stereopsis stereo vision: depth perception from 2 cameras
- Structure from motion (SFM)
- Motion tracking
- Augmented reality

To support some of the above areas, OpenCV includes a statistical machine learning librarythat contains:

- Boosting
- Decision tree learning
- Gradient boosting trees
- Expectation-maximization algorithm
- k-nearestneighbor algorithm
- Naive Bayes classifier
- Artificialneural networks
- Random forest
- Support vector machine (SVM)
- Deep neural networks (DNN)
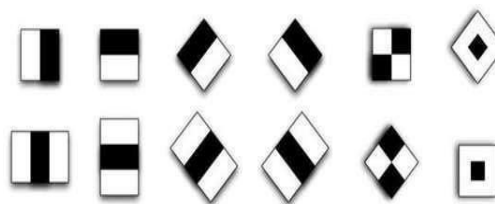
Types of Haar Features

Haar features applied on an image

The extracted combination of features will be used for detecting faces in pictures or a video. The features are tried to be matched only in a block ofpixels defined bya scale. The scale can be a square of 232x232

pixels which is the dimensions of the image taken for feature extraction in our system. Each feature of the combination will be tried tobe matched block by block. If one of the features does not appear in the block, the research in it will be stopped. The remaining features will not be tested because the machine concludes that there is no face in this block. Then, a newblock is taken, and the process is once again repeated. This method tests all the blocks of pixels with the researched combination in cascade classifier. In the images shown above where features are placed.

Local BinaryPattern (LBP)

For facial recognition process LBP algorithm is used. A great advantage of LBP is that it is illumination invariant. If you change the lighting on the scene all the pixel values will go up but the relative difference between these values will be the same.Local Binary Pattern (LBP) is an efficient texture operator whichlabels the pixels of an image by thresholding the neighborhood of each pixel and considers the result as a binary number. When LBP is combined with histograms of oriented gradients (HOG) descriptors, it improves the detection performance considerably on some datasets. Using the LBP combined with histograms we can represent the face images with a simple data vector.

The LBP requires 4 parameters namely Radius, Neighbors, Grid X, Grid Y.

1. Radius: The radius is used to build the circular local binary pattern andrepresents theradius around the central pixel.

2. Neighbors: the number of sample points to build the circular local binary pattern. the more sample points you include, the higher the computational cost. For LBP 8 neighbors are used in our system.

3. Grid X: the number of cells in the horizontal direction. The more cells, the finer the grid, thehigher the dimensionality of the resulting feature vector. It is set to 8.

4. Grid Y: the number of cells in the vertical direction. The more cells, the finer the grid, the higher the dimensionality of the resulting feature vector. It is set to 8.
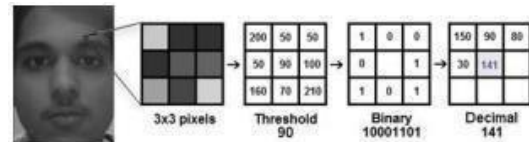

LBP algorithm for a face After the parameters are obtained the first step is to convert the image to grayscale. Next is to obtain a window of 3x3 pixels for the image with intensity of each pixel denoted by any value from 0-255. A central value is then selected to be used as threshold value which will be used to define thenew values from 8 neighbors as shown in the figure above. If the intensity of the center pixel isgreater than-or-equal to itsneighbor, then we set the

$$LBP(gp_x, gp_y) \sum_{p=0}^{P-1} S(gp - gc) \times 2^p$$

value to 1; otherwise, the value is set to 0. This calculation is done by.

$$s(x) = \begin{cases} 1 & if \ x \geq 0 \\ 0 & if \ x < 0. \end{cases}$$

In the given formula, gc: intensity value of the central pixel gp: intensity of the neighboring pixel with index p The s(x) function which is shown above is known as threshold function which will determine the binary values for the 8 neighboring pixels.
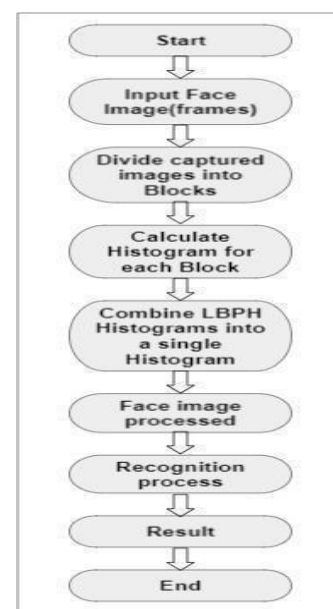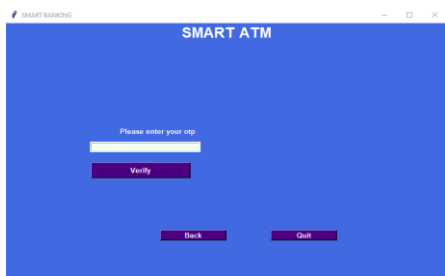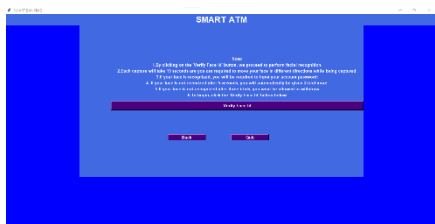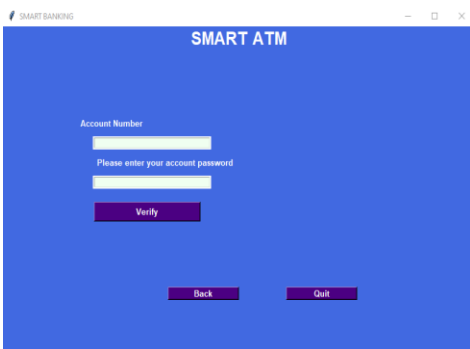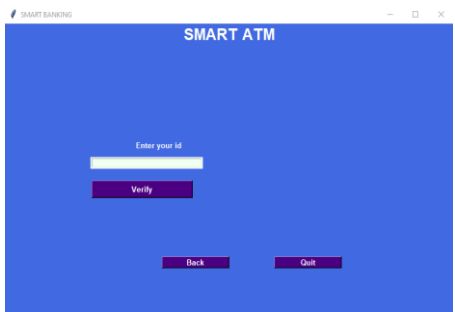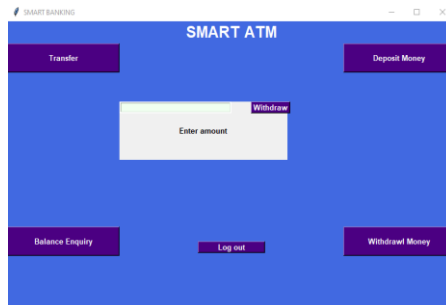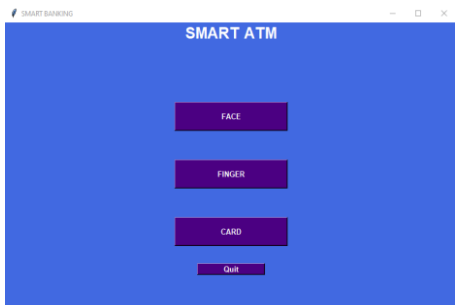
CONCLUSION :

We thus develop an ATM model that is more reliable in providing security by using facial recognition software. By keeping the time elapsed in the verification process to a negligible amount we even try to maintain the efficiency of this ATM system to a greater degree. One could argue that having the image compromised by a third party would have far less dire consequences than the account information itself. Furthermore, since nearly all ATMs videotape customers engaging in transactions, it is no broad leap to realize that banks already build an archive of their customer images, even if they are not necessarily grouped with account information.

REFERENCES :

1. Archana et al., International Journal of Advanced Research in Computer Science and Software Engineering 3(10), October - 2013, pp. 261-266

2. S.T. Bhosale and Dr. B.S.Sawant "Security In E-Banking Via Card Less Biometric Atms", International Journal of Advanced Technology & Engineering Research, Volume 2, Issue 4, July 2012.

3. Sunil Lohiya "Biometric identification and verification techniques -A future of ATM Banking System", Indian Streams Research Journal, Volume 2, Issue. 7, Aug 2012.

4. Biswas S., Bardhan Roy A., Ghosh K. And Dey N.,"A Biometric Authentication Based Secured ATM Banking System", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 2, Issue 4, April 2012 .

5. Zahid Riaz, Suat Gedikli, Micheal Beetz and Bernd Radig "A Uni_ed Features Approach to Human Face Image Analysis and Interpretation", 85748 Garching, Germany.

IRIS RECOGNITION

Dharshini.D

Abstract

An iris recognition is used for person authentication purpose. AnIris Recognition system is written in Python. It acquires an image,locates the iris and produces a unique 'iris profile' for it. Itis donethrough various modules like image extraction from user, preprocessing, edge detection, cropping, database connection and matching. After matching result will be produced, thereby personcan be recognized. It can be applied in many areas like authentication systems, fraud detection systems etc. It overcomesthe drawbacks of the existing system. First the image is cleaned up and a circular Hough transform is used toisolate theinner andouter iris boundaries but the algorithm is advanced to ensure the inner boundary is within 20-90% of the outer boundary. Basic rubber mapping is done in existing system, but rubber sheet should be implemented maximum in the proposed system. Almost entire disc of the iris must be converted to a rectangular matrix. It accounts for pupil and iris boundaries not being quite concentric. Occlusions should be almost removed properly like the eyelashes, the eyelids; specular reflections are almost removed properly. Iris code extracted which maximizes differences. Principle Components Analysis, or potentially a choice of several algorithms can be used. Noise to be removed perfectlyand boundary detections are perfect since the algorithmused is efficient and also the image is of high quality and clear. The drawbacks in the existing system is occlusions are not removed properly like the eyelashes, the eyelids, specular reflections are not removed properly. Iris code should be extracted which maximizes differences. Not used Principle Components Analysis, or potentially a choice of several algorithms. Noise is not removed perfectly and boundary detectionsarenot perfect since the algorithm used is not efficient. KEYWORDS – Iris recognition, Biometric, Image

D.Dharshini,

IV-M.Sc.SS, Department of Software Systems and Computer Science [PG],

KG College of Arts and Science, Coimbatore

INTRODUCTION

The project entitled "Iris recognition" is used for authenticating the person with the help of iris.Image processing concepts are implemented. Preprocessing and cropping of image is done, but they are not done accurately, because the images are not taken clearly. So noise removal and boundaries detection is difficult and hence authentication of person becomes tedious. The image is cleaned up and a circular Hough transform is usedto isolate the inner and outer iris boundaries. Algorithm is not advanced to ensure the inner boundary is within 20- 90% of the outer boundary. Automatically iris and pupil boundary radii are not chosen. Basic rubber mapping is done in existing system. There is a need to account for pupil and iris boundaries not being quite concentric. Rubber sheet mapping is not fully implemented, i.e. only the part of the disc of the iris is converted to a rectangular matrix.

MATERIALS AND METHODS:

DESCRIPTION:

- Image extraction
- Preprocessing
- Edge detection
- Cropping
- Database connection andmatching.

IMAGE EXTRACTION

Image extraction module is used for inputting image. Image is taken from high resolution camera or from the sample database. Feature extraction involves reducing the amount of resources required to describe a large set of data. When performing analysis of complex data one of the major problems stems from the number of variables involved. Analysis with a large number of variables generally requires a large amount of memory and computation power or a classification algorithm which over fits the training sample and generalizes poorly to new

samples. Feature extraction is a general term for methods of constructing combinations of the variables to get around these problems while still describing the data with sufficient accuracy.

PREPROCESSING

One very important area of application is image processing, in which algorithms (optimal linear filtering method) are used to detect and isolate various desired portions or shapes (features) of a digitized image or video stream. It is particularly important in the area of optical character recognition. Preprocessing is the 1st step in which the noise get removed from the image which has taken from the high resolution camera. Currently images are taken from standard database; it can also be taken using webcam.

EDGE DETECTION

Edge detection is a fundamental tool in image processing, machine vision and computer vision, particularly in the areas of feature detection and feature extraction. In this step the edges of iris and pupil get detected using Canny Edge Detection Algorithm. Edges are the boundaries of the eye layer. The edges extracted from a two-dimensional image of a three-dimensional scene can be classified as either viewpoint dependent or viewpoint independent. A viewpoint independent edge typically reflects inherent properties of the threedimensional objects, such as surface markings and surface shape.

CROPPING

The module crops the boundaries of iris and pupil, and calculates the eight parameters for matching purpose. After cropping the parameters calculated will be decimal values. Cropping refers to the removal of the outer parts of an image to improve framing, accentuate subject matter or change aspect ratio. Depending on the application, this may be performed on a physical photograph, artwork or film footage, or achieved digitally using image editing software. The term is common to the film, broadcasting, photographic, graphic design and printing industries.

DATABASE CONNECTION AND MATCHING

By using Access database these above eight values are stored in database. Here database values will be checked with the input values. If the database values are matched with current calculated values, then that person is authenticated otherwise not.

OUTPUT DESIGN
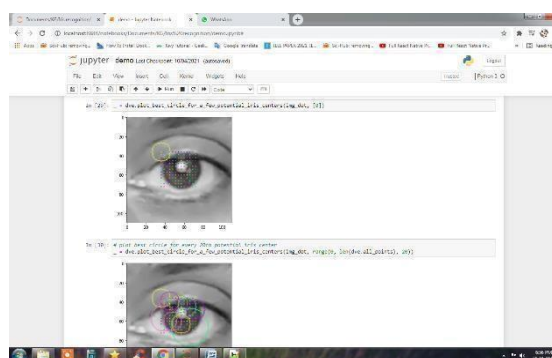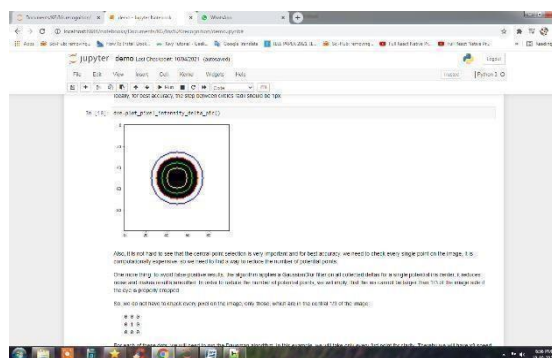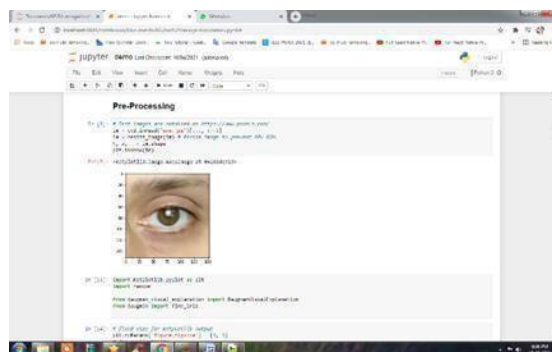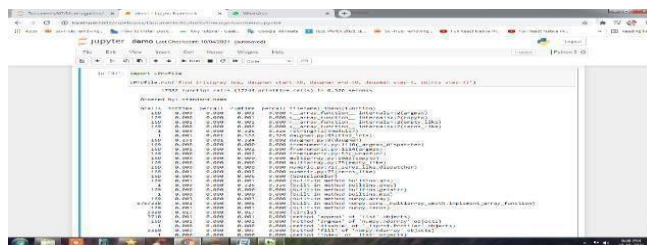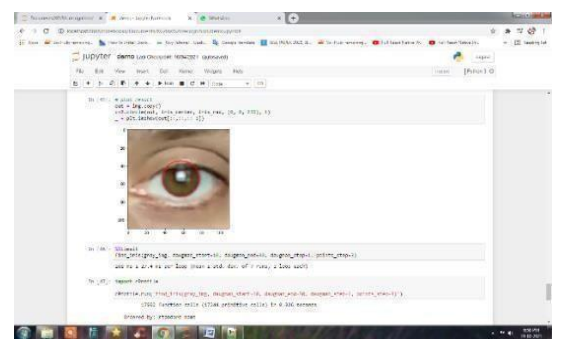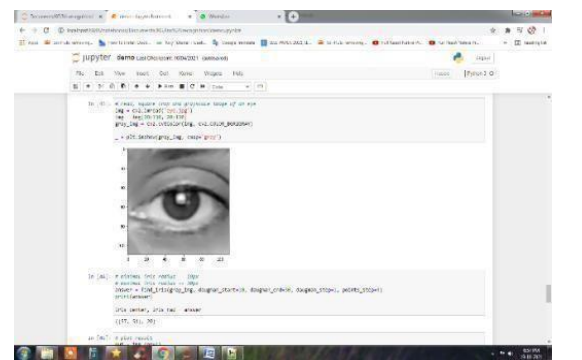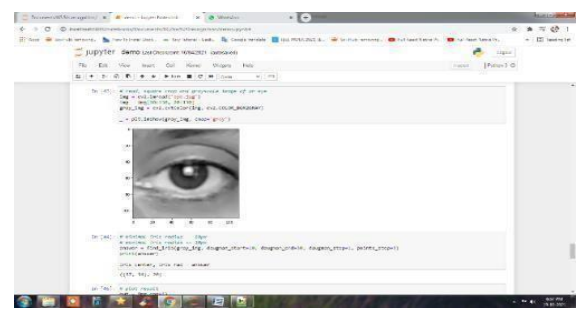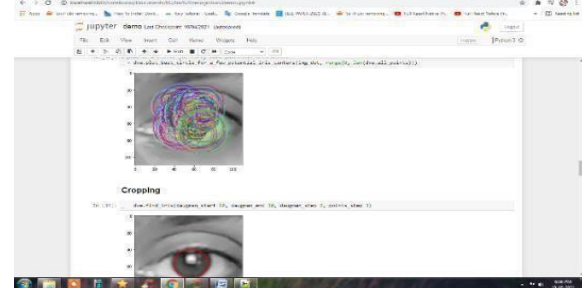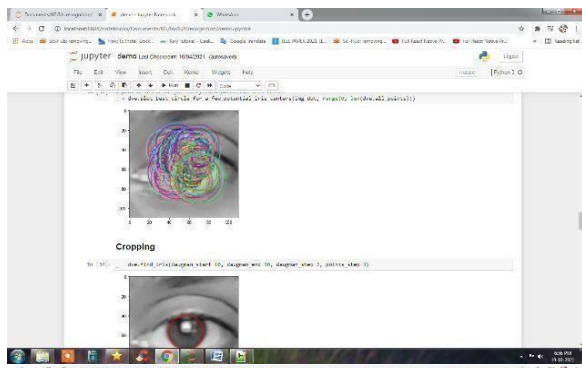
OUTPUT DESCRIPTION:

Collection of user images are stored in dataset and admin can acess that image and apply all the modules, then Daughman's algorithm is used to match and find the accuracyof the result produced.

CONCLUSION :

"Iris recognition" is the project that goes around the development of iris recognition software based on image processing concepts. It is the project that is intended tomake the connection todatabase, store the values of iris parameters in database and checks it with the input values ofthe entered image in an easy, fair, faster andreliable.

The software is designed in a special way which deals with iris recognition process. Users can create the connections to the database and store the decimal values. Later on the user can input the image of the eye, where iris part will be extracted and recognized. Further expansion of the system also can be done in future if needed. The application can be enhanced in the future with the needs of the organization. The database and theinformation canbe updated to the latest forthcoming versions. Thus the system can be altered in accordance with the future requirements and advancements. System recognizes iris and displays the result using iris recognition process. In future the system can be extended to detect other facial features along with emotion detection.

REFERENCES :

1.   Mark Spenkink, Andrew J Indovina, David Jung, "PYTHON Long time", Techmedia, NewDelhi, 2010

2.   Rogger S. Pressman, "Software Engineering a Practitioner's Approach", Tata McGraw Hill, 1991, 3rd edition.

3.   Julia case Bradley, Anita C. Millspaugh, "PYTHON and PostgreSQL", 2009, 1st edition.

4. Elias M.Awad, "System Analysis and Design", Golgotha Publishers (P) Ltd., Second edition, NewDelhi, 1992.

A STUDY ON INFRASTRUCTURE DESIGN AND LAYERS OF WIRELESS SENSOR NETWORKS

Mr.Kalai Kannan.P[1]
Dr.Vidhya.S[2]

Abstract

Wireless sensor networks have recently shown tremendous growth in all the fields for sensing very minute quantities of data which helps to take some major decisions. To manage these networks efficiently researchers are focusing on the infrastructure of WSN, which turns its layout as per the application where it is been deployed and used. The infrastructure design gives the power to the entire network to assign the topology and manage the entire network efficiently in terms of energy consumption, the survival time of the network, and transmission of the data between various elements of the WSN.

Keywords – WSN, Architecture model, design, types, applications.

I.INTRODUCTION

Wireless Sensor Network Architecture and Its Operations. Generally, WSN (Wireless Sensor Network) is the most standard service employed in marketable and artificial operations, because of its specialized development in a processor, communication, and low-power operation of the embedded computing system. The wireless sensor network is equipped with various devices that are used to observe the surroundings like temperature, moisture, pressure, position,

Mr.P.Kalai Kannan MCA.,M.Phil [1],
Asst., Professor
Dept. of M Sc. SS & CS
KG College of Arts and Science, Coimbatore

Dr.S.Vidhya[2] MCA., M.Phil., Ph.D[2]
Director of IQAC
KG College of Arts and Science, Coimbatore

vibration, sound, etc. These devices can be used in real-time operations to perform sensing and computing tasks like smart detecting, a discovery of neighbor nodes, data processing, and storehouse, data collection, target shadowing, examining and controlling, synchronization, problem localization, and effective routing between the base station and mote. Presently, wsns are beginning to be organized in an enhanced step. It is not a dramatic thing to say that in 10 to 15 times that the world will be defended with WSNs with door to them via the Internet. This can be measured as the Internet getting an assisted physical network. This technology is thrilling with horizonless eventuality for numerous operation areas like medical, environmental, transportation, service, entertainment, motherland defense, extremity operation, and also smart spaces.

II. LITERATURE REVIEW

A Wireless Sensor Network is one sort of remote organization that incorporates a more number of coursing, self-coordinated, minute, low controlled gadgets named sensor hubs called bits. These organizations positively cover an enormous number of spatially conveyed, nearly few bit size, battery-worked, installed microdevices that are arranged to caringly gather, cycle, and move information to the administrators, and it has controlled the capacities of registering and handling[1][2]. Hubs are little PCs, which work together to frame organizations. The sensor node is a multi- functional, energy-efficient wireless device. The applications of motes in industrial are widespread. A collection of sensor motes collects the data from the environment surroundings to achieve specific application objectives[3][5]. The transmission between motes can be done with each other using controlled transceivers. In a wireless sensor network, the number of sensing motes can be in the order of hundreds or even thousands. In contrast with sensor networks, Ad Hoc networks will have fewer nodes without any definite structure.

The most general wireless sensor network architecture follows the OSI architecture Model. The common architecture of the WSN includes five layers and three cross layers. Generally in sensor network, we require five layers, namely application, transport, network, data link & physical layer [6][8]. Themajor three cross planes attributes arenamely powered management, mobility management, and task management. These layers of the WSN are used toaccomplish the network and make the sensors work together to raise the complete efficiencyof thenetwork [9][11].

III. TYPES OF WSN ARCHITECTURES

The architecture used in WSN is sensor network architecture. This kind of architecture is applicable in different places such as hospitals, schools, roads, buildings as well as it is used in different applications such as security management, disaster management & crisis management, etc[1]. There are two major types of structured architectures used in wireless sensor networks. Layered Network Architecture, and Clustered Architecture. These are defined as follows below.

Layered Network Architecture

Clustered Network Architecture

Layered Network Architecture

This sort of organization involves many sensor hubs just as a base station [2]. Here the course of action of organization hubs should be possible into concentric layers. It contains five layers just as 3 cross layers that incorporate the accompanying elements.
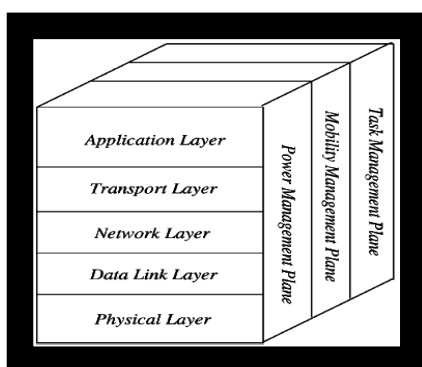

Figure 1: Layers & Plane

Application Layer

The application layer is especially for traffic the board and offers programming for a long time that converts the information in an unmistakable structure to track down sure data Sensor networks are organized in various applications in various fields like farming, military, climate, clinical, and so forth[3].

Transport Layer

The vehicle layer can convey blockage evasion and dependability where plenty of conventions planned to offer this capacity are either useful on the upstream[4]. These conventions utilize unique instruments for misfortune acknowledgment and misfortune regeneration. The vehicle layer is required when a framework is wanted to contact different organizations.

Giving a solid misfortune recuperation is more energy-effective and that is one of the basic justifications for why TCP isn't good for WSN[5]. By and large, Transport layers can be isolated into Packet driven, Event-driven. There are a few famous conventions in the vehicle layer in particular STCP (Sensor Transmission Control Protocol), PORT (Price-Oriented Reliable Transport Protocol and PSFQ (Pump slowly fetch quickly).

Network Layer

The fundamental capacity of the organization layer is directing, it has a ton of errands dependent on the application, however, the primary assignments are in the power moderating, halfway memory, and sensor don't have a general ID and must be self-coordinated.

The straightforward thought of the directing convention is to clarify a solid path and repetitive paths, as per a persuading scale called a measurement, which changes from one convention to another [6]. There is a lot of existing conventions for this organization layer, they can be isolated into level steering and hierarchal directing or can be isolated into time-driven, inquiry-driven, and occasion-driven.

Data Link Layer

The information interface layer is obligated for multiplexing information outline identification, information streams, MAC, and mistake management, affirming the

dependability of point–point (or) point–multipoint.

Physical Layer

Theactual layer gives an edge to moving a flood of pieces over the actual medium. This layer is liable for the choice of recurrence, age of a transporter recurrence, signal discovery, Modulation, and information encryption. IEEE 802.15.4 is proposed as normal for low rate specific regions and remote sensor networks with minimal expense, power utilization, thickness, the scope of correspondence to further develop the battery life[7]. CSMA/CA is utilized to help star and shared geography. There are a fewforms of IEEE 802.15.4.V.

The principle advantage of involving this sort of design in WSN is that each hub includes essentially in less-distance, low-power transmissions to the adjoining hubs because of which power usage is low as contrasted and different sorts of sensor network engineering[8]. This sort of organization is adaptable just as incorporates a high adaptation to non-critical failure.

Grouped Network Architecture

In this sort of design, independent sensor hubs add into bunches known as groups which rely upon the "Drain Protocol" since it utilizes groups. The term 'Filter Protocol' means "Low Energy Adaptive Clustering Hierarchy"[9]. The primary properties of this convention fundamentally incorporate the accompanying.
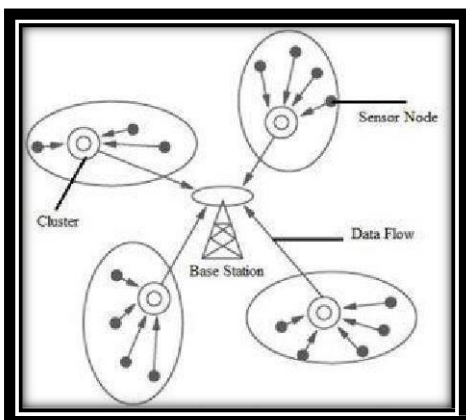

Figure 2: General WSN Architecture
Thisis a two-level in-order grouping design.

This circulated calculation is utilized to orchestrate the sensor hubs into gatherings, known as groups.

• In each bunch that is shaped independently, the head hubs of the group will make the TDMA (Time-division multiple access) plans.

• It utilizes the Data Fusion idea with the goal that it will make the organization energy effective.

This sort of organization design is much utilized because of the information combination property. In each bunch, each hub can cooperate through the top of the group to get the information[10]. Every one of the groups will share their gathered information toward the base station. The development of a group, just as its head choice in each bunch, is a free just as theindependent conveyed method.

IV. DESIGN ISSUES OF WSN ARCHITECTURE

The design issues of wireless sensor network architecture mainlyinclude the following.

•   Energy Consumption

•   Localization

•   Coverage

•   Clocks

•   Computation

•   Cost of Production

•   Design of Hardware

•   Qualityof Service

Energy Consumption

In WSN, power utilization is one of the primary issues. As an energysource, the batteryis utilized by outfitting with sensor hubs[11]. The sensor network is organized inside hazardous circumstances so it turns convoluted for changing in any case re-energizing batteries. The energy utilization for the most part relies upon the sensor hubs' activities like correspondence, detecting, and information handling. All through correspondence, the energy utilization is exceptionally high. Along these lines, energy utilization can be kept away from at each layer byutilizing proficient directing

conventions.

Limitations:

For the activity of the organization, the essential, just as a basic issue, is sensor restriction. So sensor hubs are organized in an unaddressed way so they don't be aware of their area. The trouble of deciding the sensor's actual area whenever they have been organized is known as a limitation. This trouble can be settled through GPS, guide hubs, confinement dependent on proximity.

Inclusion

The sensor hubs in the remote sensor network use an inclusion calculation for distinguishing information just as send them to sink through the directing calculation. To cover the entire organization, the sensor hubs ought to be picked. Their productive strategies like least and most noteworthy openness way calculations just as inclusion plan convention are suggested.

Clocks

In WSN, clock synchronization is a not simple administration. The principle capacity of this synchronization is to offer a standard timescale for the hubs of nearby clocks inside sensor organizations. These timekeepers should be synchronized inside certain applications like observing just as follows.

Calculation

The calculation can be characterized as the amount of information that proceeds through every hub. The principle issue inside calculation is that it should diminish the use of assets. Assuming that the life expectancy of the base station is more perilous, then, at that point, information handling will be finished at every hub before information communicating toward the base station. At each hub, assuming that we have a few assets then the entire calculation ought to be done at the sink.

Creation Cost

In WSN, an enormous number of sensor hubs are organized. So if the single hub cost is exceptionally high then the general organization cost will likewise be high. Eventually, the cost of every sensor hub must be kept less. So the cost of each sensor

hub inside the remote sensor network is a requesting issue.

Equipment Design

When planning any sensor organization's equipment like power control, miniature regulator and correspondence unit should be energy-productive. Its configuration should be possible so that it utilizes low energy.

Nature of Service

The nature of administration or QoS is only the information should be disseminated on schedule. Since a portion of the ongoing sensor-put together applications mostly depend with respect on time. So assuming the information isn't disseminated on schedule toward the recipient then the information will turn futile. In WSNs, there are various kinds of QoS issues like organization geography that might alter oftentimes just as the open condition of data utilized for directing can be loose.

v. DESIGN OF A WIRELESS SENSOR NETWORK

The design of WSN chiefly involves different geographies utilized for radio interchanges networks like a star, lattice, and crossover star. These geographies are talked about underneath in a word.

Star Network

The correspondence geography like a star network has utilized any place just the base station can send or get a message toward distant hubs. There are various hubs are accessible which are not permitted to communicate messages to one another. The advantages of this organization predominantly contain straightforwardness, fit for keeping the power usage of distant hubs to a base.

It additionally lets interchanges with less dormancy among the base station just as a far-off hub. The fundamental downside of this organization is that the base station ought to be in the scope of radio for every one of the different hubs. It isn't strong like different organizations since it relies upon a solitary hub to deal with the organization.

Network

This sort of organization grants to the transmission of

the information starting with one hub then onto the next inside the organization that is in the scope of radio transmission. Assuming a hub needs to send a message to another hub and that is out of radio correspondences range, then, at that point, it can use a hub like a middle to send the message toward the favored hub.

The principle advantage of a lattice network is versatility just as repetition. At the point when a singular hub quits working, a far-off hub can speak to some other kind of hub inside the reach, then, at that point, advances the message toward the favored area. Also, the organization range isn't naturally limited through the reach among single hubs, it can expand just by adding various hubs to the framework.

The primary disadvantage of this sort of organization is power use for the organization hubs that execute the interchanges like multi-jump are typically higher than different hubs that don't have this limit of restricting the existence of battery often. Besides, when the quantity of correspondence bounces increments toward an objective, then, at that point, the time taken to send the message will likewise increment, especially assuming the low power interaction of the hubs is a need.

Mixture Star – Mesh Network

A mixture among the two organizations like star and mesh gives a solid and adaptable interchanges organization while keeping up with the power utilization of remote sensor hubs to a base. In this sort of organization geography, the sensor hubs with less power are not permitted to send the messages. This grants to upkeep least power use.

However, other organization hubs are permitted with the capacity of multi-bounce by permitting them to communicate messages starting with one hub then onto the next on the organization. Typically, the hubs with the multi-jump limit have high power and are often connected to the mains line. This is the executed geography through the forthcoming standard cross-section organizing called ZigBee.

The parts used to make a remote sensor hub are

various units like detecting, handling, handset, and power. It likewise incorporates extra parts that rely upon an application like a power generator, an area tracking down the framework, and a mobilizer. For the most part, detecting units incorporate two subunits to be specific ADCs just as sensors. Here sensors create simple signs which can be changed to advanced signs with the assistance of ADC, after that it communicates to the handling unit.

For the most part, this unit can be related through a minute stockpiling unit to deal with the activities to make the sensor hub work with different hubs to accomplish the assigned detecting works. The sensor hub can be associated with the organization with the assistance of a handset unit. In the sensor hub, one of the fundamental parts is a sensor hub. The power units are upheld through power rummage units like solar-powered cells while different subunits rely upon the application.

A remote detecting hubs practical square chart is displayed previously. These modules give a flexible stage to manage the prerequisites of wide applications. For example, because of the sensors to be organized, the substitution of sign molding square should be possible. This grants to the utilization of various sensors alongside the remote detecting hub. In like manner, the radio connection can be traded for a predetermined application.

VI . APPLICATIONS

The operations of wireless sensor networks substantially include health, service, environmental, home, & other marketable areas.

- Military Operations

- Health Operations

- Environmental Operations

- Home Operations

- Marketable Operations

- Area monitoring

- Health care covering

- Air pollution monitoring

- Timber fire discovery

- Landslide discovery

- Water quality monitoring

- Artificial monitoring

VII. CONCLUSION

The WSN architecture here follows the OSI model with some various layers like application, network, data link, physical, transport. These layers each work with their own functionality and follow the same rules and strategies followed in the OSI model of a computer network. Next, it shows a clear detailed note on various types of infrastructure that could be followed in WSN. Next to that this paper concentrates on various design issues of the WSN. Based on the design issues some of the design strategy been derived as solution structures. Finally, the applications of WSN with various domains were stated.

REFERENCES

[1]   Texas Transport Institute. Urban Mobility Report 2010. Available online: http://mobility.tamu.edu/ums/ (accessed on 25 October 2011).

[2] Birk, W.; Osipov, E.; Eliasson, J. iRoad—Cooperative Road Infrastructure Systems for Driver Support. In Proceedings of the 16th ITS World Congress, Stockholm, Sweden, 21–25 September 2009.

[3] Klein, L. Sensor Technologies and Data Requirements for ITS Applications; Artech House: Boston, MA, USA, 2001.

[4]   Hartenstein, H.; Laberteaux, K. VANET Vehicular Applications and Inter-Networking Technologies (Intelligent Transport Systems); Hartenstein, H., Laberteaux, K.P., Eds.; John Wiley and Sons: Hoboken, NJ, USA, 2010; ISBN: 9780470740569.

[5]   Akyildiz, I.; Su, W.; Sankarasubramaniam, Y.; Cayirci, E.A survey on sensor networks. IEEE Commun. Mag. 2002, 40,102-114. Sensors 2011, 11 10257

[6] Tubaishat, M.; Zhuang, P.; Qi, Q.; Shang, Y. Wireless sensor networks in intelligent transportation systems. Wirel. Commun. Mob. Comput. 2010, 9, 287-302.

[7] Mouftah, H.; Khanafer, M.; Guennoun, M. Wireless Sensor Network Architectures for Intelligent Vehicular Systems. In Proceedings of the 3rd International Conference on New Technologies, Mobility and Security, Cairo, Egypt, 20–23 December 2009; pp. 1-8.

[8] Hossain, E.; Chowb, G.; Leung, V.; McLeoda, R.; Mišićd, J.; Wongc, V.; Yang, O. Vehicular telematics over heterogeneous wireless networks: A survey. Comput. Commun. 2010, 33, 775-793.

[9] Lee, U.; Gerla, M. A survey of urban vehicular sensing platforms. Comput. Netw. 2010, 54, 527-544.

[10]   Lee, U.; Zhou, B.; Gerla, M.; Magistretti, E.; Bellavista, P.; Corradi, A. Mobeyes: Smart mobs for urban monitoring with a vehicular sensor network. IEEE Wirel. Commun. 2006, 13, 52-57.

[11]   Qin, H.; Li, Z.; Wang, Y.; Lu, X.; Wang, G.; Zhang, W. An Integrated Network of Roadside Sensors and Vehicles for Driving Safety: Concept, Design, and Experiments. In Proceedings of the 2010 IEEE International Conference on Pervasive Computing and Communications (PerCom), Manheim, Germany, 29 March–2 April 2010.

MEDSERV - AN IMPLEMENTATION OF A DELIVERY SYSTEM USING THE KNN ALGORITHM

Manjula M

Abstract

MEDSERV - An implementation of a Delivery framework utilizing k nearest neighbor (KNN) Algorithm, the principle objective of this undertaking is to allow the client to arrange medication and show the briefest way to the sales rep for the relating objective utilizing GPS (Global Positioning System). The application is planned with an intelligent graphical Interface where the client can arrange the medication. The salesman can see the rundown of areas to convey and the briefest way to arrive at an objective. The framework is an application-based framework that permits clients to put the request on the web. The framework is adequate since it assists the sales rep with reviewing the briefest course for the whole objective that will be conveyed. The application is intended to plan for a solitary clinical store thus clients can book the medication earlier. This is intended to further develop proficiency and decrease mistakes in the traditional framework. The task is carried out utilizing Eclipse IDE or Android Studio and MySql is utilized to store and recover information.

KEYWORDS – Admin, client, and map

Manjula M

IV-M.Sc.SS,

Department of Software Systems and Computer Science

KG College of Arts and Science

INTRODUCTION

MEDSERV - An implementation of a Delivery framework utilizing the k nearest neighbor (KNN) Algorithm, the principle point of this venture is to allow the client to arrange medication and show the briefest way to the sales rep for the relating objective utilizing GPS (Global Positioning System). The application is planned with an intuitive graphical interface where the client can arrange the medication. The sales rep can see the rundown of areas to convey and the briefest way to arrive at the objective. The application is intended to plan for a solitary clinical store thus clients can book the medication earlier. The task is carried out utilizing Eclipse IDE or Android Studio and MySql is utilized to store and recover information.

This Med-Alerts project is utilized to give direction and backing to cognitive decline patients to accurately take their prescriptions. The application helps the client experiencing cognitive decline by making alarms that let the client when and know medicine to be taken.

MATERIALS AND METHODS:

MODULES DESCRIPTION

1. User Interface Design
2. Add Medicine stock Details
3. Add Drug details
4. Online shopping
5. Delivery with Shortest Path

User Interface Design

Online clients should approach a PC and a method of installment. In our framework, the client cooperations are login, enlistment, correspondence, online installments, and exchange. Client subtleties are dealt with in the backend normal database. In computer security, a login or logon is the cycle by which individual admittance to a PC framework is constrained

by identifying and confirming the user referring to credentials presented by the user. A client can sign in to a framework to get access and can then log out or log off when the entrance is not generally required. To log out is to stop one's admittance to a PC framework in the wake of having recently signed in.

Add Medicine stock Details

Stock administration framework will have the accompanying cycles Stock Ledger, Stock development explanation: Online stock data of chosen items, User Management concerning the deal, Online stock status with Purchase Order age to the alluded seller for quite some time, Batch Management: The framework deals with various costs and expiry for various clusters. You generally get exceptional stock for various things with various clusters and their units of estimation lying at various stores of the Company. The framework will likewise give a report showing the rundown of items terminating after a predetermined no. of days. The framework additionally doesn't permit dealing with the items previously lapsed and Stocks Analysis.

Add Drug details (medicine details)

The client can add subtleties to his measurement plans. Utilizing the date field one can enter the beginning and finishing dates between which he needs to take drugs. The client can add the portrayal of the medication, including name, reason, and other related depictions. All the data will be saved in the data set. This makes any time accessibility of the patients' records.

 Online shopping (medicine purchase)

The fundamental information put away for this table is all the data about the medications. A few medications have other clinical names, incidental effects, and so on So before any client arranges the medication online the person can peruse all the depiction that is furnished alongside the medication name. Any client can likewise learn about any medication that is new in the market. They can fill in the remedy and request the necessary medications. Tracking number, which will assist the client with following their orders, Total, Shipping

Status, which will be useful to track down the current status of the request, Shipping Date (when it was transported out), Shipping Fees, the Address where the request was sent and so on.

Delivery with Shortest Path

KNN k-Nearest Neighbor produces an algorithm worked for tracking down the briefest way for multi-focused conveyance . The utilized KNN calculation to observe the briefest way from start highlight all focuses should be served then taking the nearest one and considered as the new beginning point, keep exploring to observe the short way to different focuses until all focuses visited, that for forward way, along these lines each point way is added to get the full way that passes in all places in conveyance extension to get enhance plan for visiting required focuses with the smallest expense.
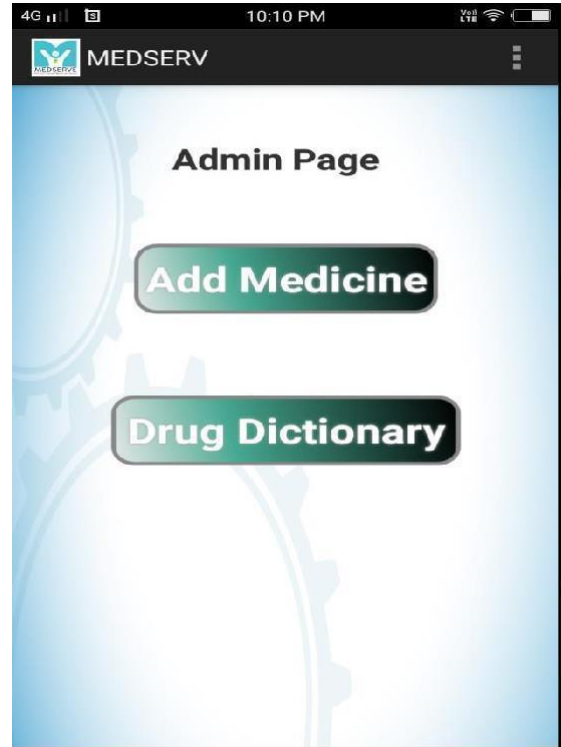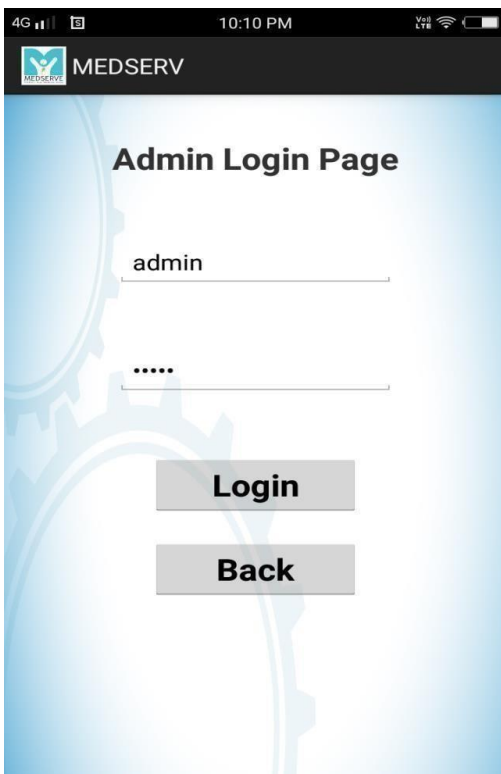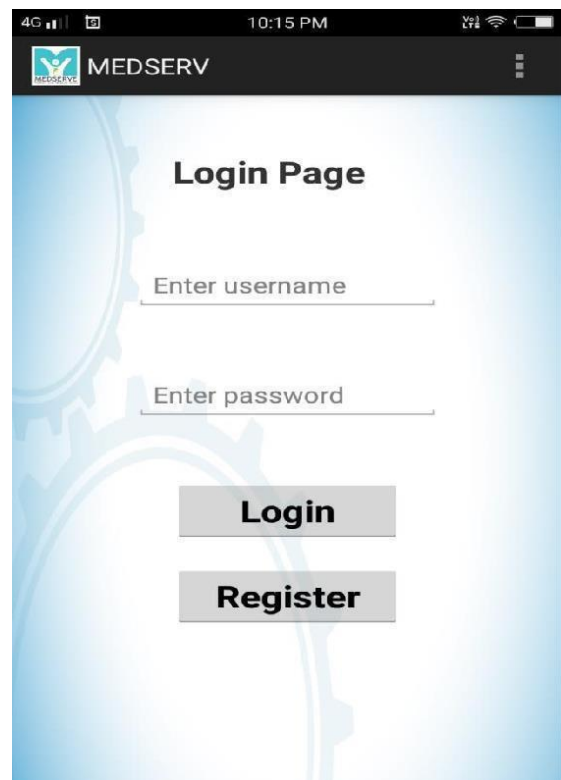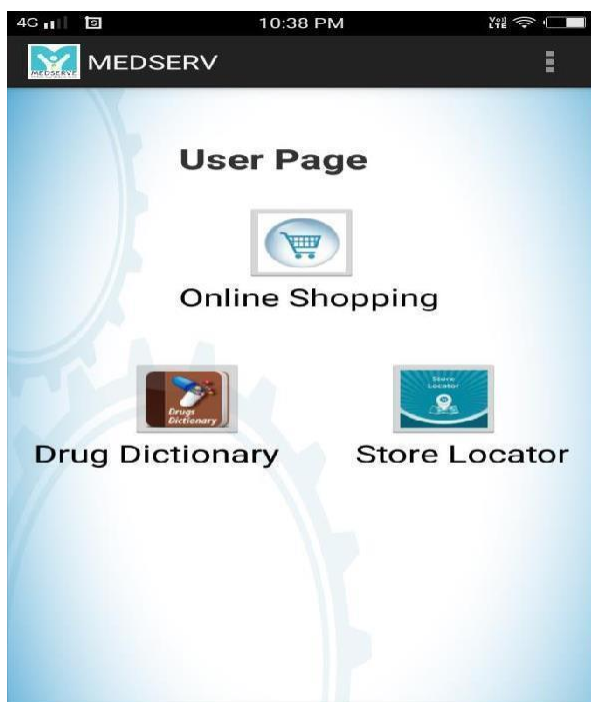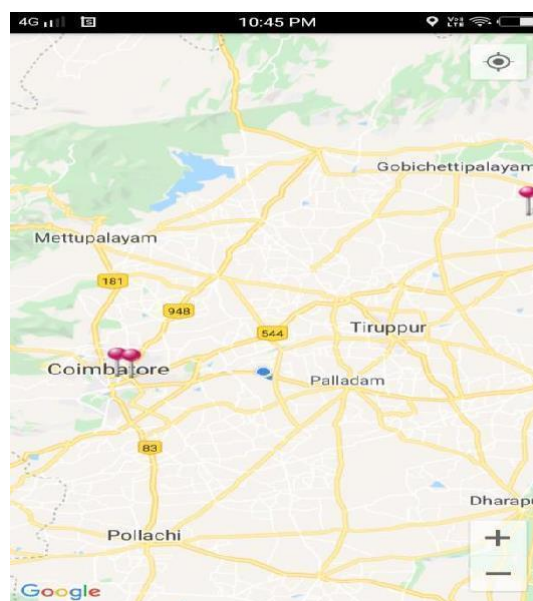
ARCHITECTURAL DIAGRAM
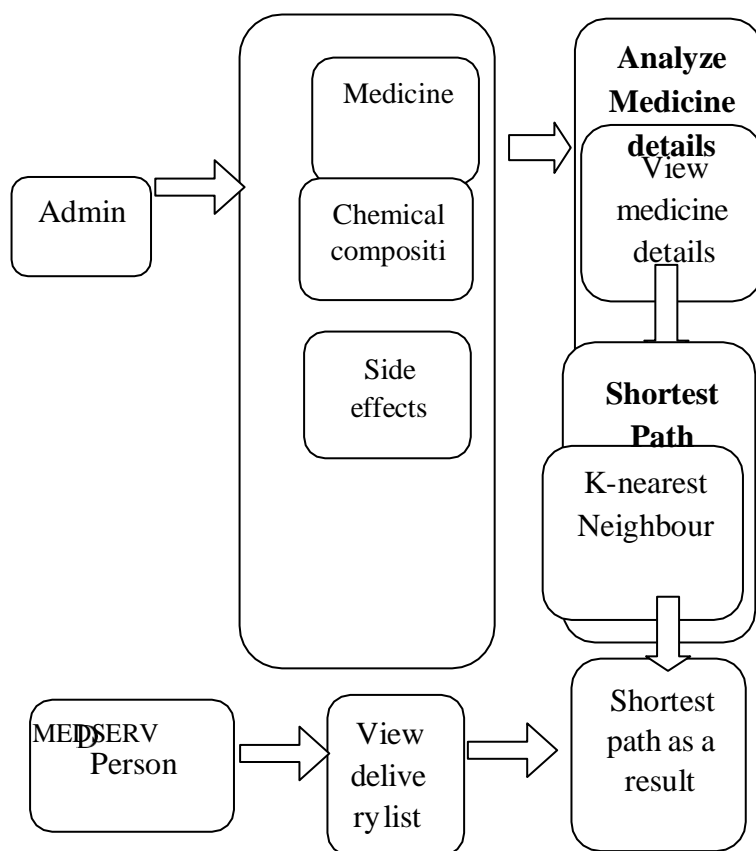
SCREENSHOTS:
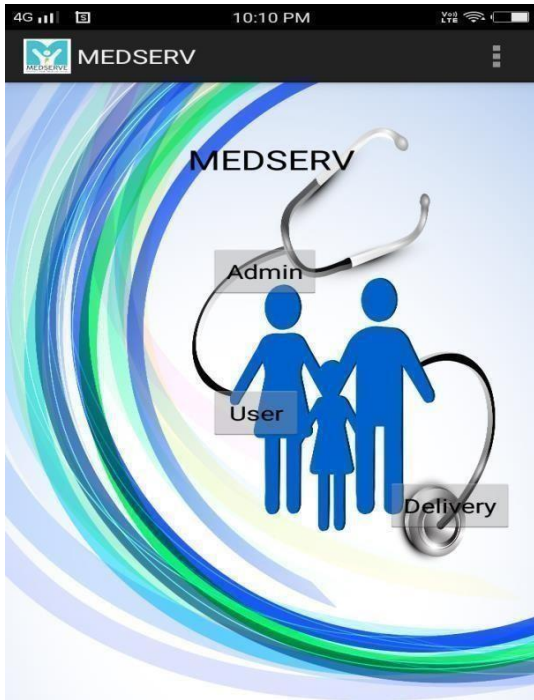
ADMIN PAGE

ADMIN LOGIN PAGE

USER LOGIN PAGE

USER PAGE

GETTING SHORTEST ROUTE


SHORTEST PATH

CONCLUSION

The application was effectively evolved and accomplished its prerequisites, however, it requires more testing to expand strength, particularly the client's following component. The application should be tried on truly actual gadgets. All the testing of the applicationwas finished utilizing emulators because of the absence of a genuine handset for testing. The application can be carried out to a specific organization or college by altering the guides at open road maps. Further examination should be possible to change the guide server toa server indicated bythe client.
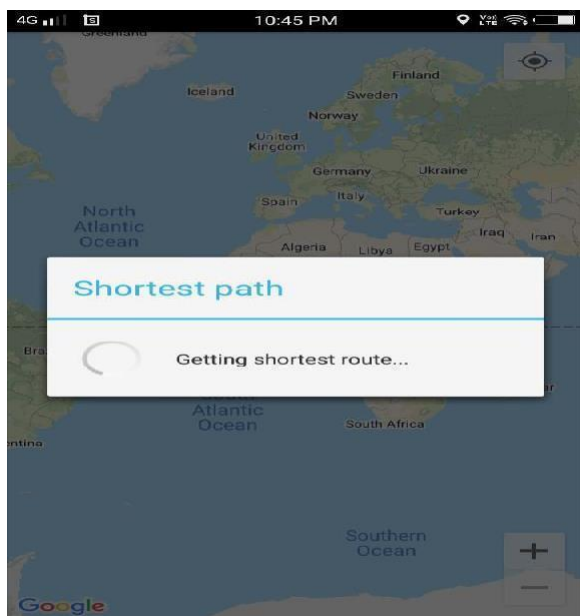
REFERENCES

[1] R.C. Gonzalez, R.E. Woods, Digital Image Processing, third ed., Pearson Prentice-Hall, Upper Saddle River, NJ, 2008.

[2] S. Theodoridis, K. Koutroumbas, Pattern Recognition, second ed., Academic Press, New York, 2003.

[3] U.M. Fayyad, G.P. Shapiro, P. Smyth, R. Uthurusamy, Advances in Knowledge Discovery and Data Mining, MIT Press, Boston, MA, 1996.

FAKE NEWS DETECTION

Navin K.C

Abstract

A kind of sensationalist reporting, fake news exemplifies bits of information that might be scams and large spread through web-based media. This is regularly done to further or force specific thoughts, and it is frequently accomplished with political plans. Such news things might contain bogus as well as overstated cases, and may turn out to be visualized by calculations, and clients might wind up in a channel bubble. TF (Term Frequency): The time a word shows up in a record is its Frequency. A higher worth method a term shows up more frequently than others; thus, the archive is a decent match when the term is essential for the hunt terms. The proposed framework utilizes the IDF. IDF (Inverse Document Frequency): Words that happen commonly in an archive, yet additionally happen ordinarily in numerous others, might be unessential. IDF is a proportion of how huge a term is in the whole corpus. The TfidfVectorizer changes over an assortment of crude records intoa grid of TF-IDFhighlights.

KEYWORDS – News Dataset.

Navin K C

IV-M.Sc.SS, Department of Software Systems and Computer Science [PG],

KG College of Arts and Science

INTRODUCTION

The project entitled "fake news detection" is utilized to distinguish whether the news is REAL or FAKE.

Nowadays, fake news is making various issues, from sarcastic articles to created news and plan government promulgation in certain outlets. Fake news and the absence of confidence in the media are developing issues with immense implications for our general public. A deliberately deceptive story is "Fake news" however recently the prattling online media talk is changing its definition. Some of them presently use the term to excuse realities fighting to their favored perspectives.

The significance of disinformation inside American political talk was the subject of profound consideration, especially following the American presidential political race. The term 'fake news' became normal speech for the issue, especially to portray authentically inaccurate and deceiving articles distributed generally to bring in cash through site visits. This undertaking appears to have created a model that can precisely anticipate the probability that a given article is fake information.

Facebook has been at the focal point of much scrutinize following media consideration. They have as of now carried out a component tohail fake news on the site when a client sees it; they have likewise said freely they are chipping away at to separate these articles in a robotized way. Unquestionably, it's anything but a simple undertaking. A given calculation should be politically fair - since fake news exists on the two closures of the range - and give an equivalent equilibrium to authenticnews sources on one or the flip

side of the range. Furthermore, the subject of authenticity is a troublesome one. In any case, to tackle this issue, it is important to have a comprehension of what Fake News is. Afterward, it is expected to investigate how methods in the fields of AI, regular language handling assist us with recognizing fakenews.

MATERIALS AND METHODS:
DESCRIPTION:

- Data Collection.
- Data Cleaning.
- Tokenization & Visualization.
- Classification.
- Random Forest Algorithm.
- Decision TreeClassifier Algorithm Analysis.
- Logistic Regression Algorithm Analysis.

DATA COLLECTION:

We can get online news from various sources like web-based media sites, internet searchers, landing pages of information office sites, or the reality looking at sites. On the Web, there are a couple of freely accessible datasets for Fake news orders like Buzzfeed News, BS Locator, and so forth

DATA CLEANING
PRE-PROCESSING DATA

Online media information is the profoundly unstructured greater part of them is the media correspondence despondence errors, slang, bad grammar, and so on. The journey for expanded execution and unwavering quality has made it basic to foster procedures for the usage of assets to settle on informed choices. To accomplish better bits of knowledge, it is important to clean the information before it very well may be utilized for prescient displaying. For this reason, fundamental pre-handling was done on the News preparing information.

TOKENIZATION & VISUALIZATION:

While understanding information, we get information in the organized or unstructured configuration. An organized configuration has a clear-cut example, while unstructured information has no legitimate construction. In the middle of the 2 constructions, we have a semi-organized arrangement which is an equally preferred organized, over-unshaped configuration. Tidying up the text information is important to feature credits that are planned to need our AI framework to get on. Cleaning (or pre-handling) the information normally comprises of various advances:

- Remove Punctuation
- Tokenization
- Remove stopwords
- Stemming

CLASSIFICATION:

This segment manages to prepare the classifier. Various classifiers were examined to predict the class of the text. We investigated explicitly three different AI calculations The executions of these classifiers were finished utilizing Python librarySci-Pack Learn.

RANDOM FOREST ALGORITHM ANALYSIS:

Random Forest is a brand name term for a group of chosen trees. In Random Forest, we have an assortment of choice trees (so exceptionally known as Forest). To arrange another item founded on ascribes, each tree gives a grouping and we say the tree votes in favor of that class. The forest picks the grouping having the most votes (over every one of the trees in the forest). The Random Forest is an arrangement calculation comprising numerous choices of trees. It utilizes sacking and element haphazardness when fabricating every individual tree to attempt to make an uncorrelated forest of trees whose expectation by the board of trustees is more precise than that of any singular tree. Random Forest, similar to what its name infers, comprises countless individual choice trees that work as agathering. Every individual tree in the Random Forest lets out a class expectation, and the class with the most

votes becomes our model's forecast. The explanation for why the arbitrary random Forest model functions admirably is: An enormous number of somewhat uncorrelated models (trees) working as a board of trustees will beat any of the singular constituent models.

DECISION TREE CLASSIFIER ALGORITHM ANALYSIS:

Sacking (Bootstrap Aggregation) Decisions trees are exceptionally touchy to the information they are prepared on little changes to the preparation set can bring about fundamentally unique tree structures. Random forest exploits this by permitting every individual tree to arbitrarily test from the dataset with substitution, bringing about various trees. This cycle is known as stacking or bootstrapping. HighlightHaphazardness In a typical decisions tree, when the timehas come to part a hub, we consider each conceivable component and pick the one that creates the most partition between the perceptions in the left hub versus those in the right hub. Interestingly, each tree in a random forest can pick just from an arbitrary subset of elements.

LOGISTIC REGRESSION ALGORITHM ANALYSIS:

It is a grouping, not a relapse calculation. It is utilized to gauge discrete qualities (Binary values like 0/1, yes/no, true/false) given the arrangement of free variable(s). In straightforward words, it predicts the probability of the event of an occasion by fitting information to a logit work. Consequently, it isotherwise called logit relapse. Since it predicts probability, its result esteems to lie somewhere in the range of 0 and 1 (true to form). Numerically, the log chances of theresult are demonstrated as a straight blend of the indicator factors.
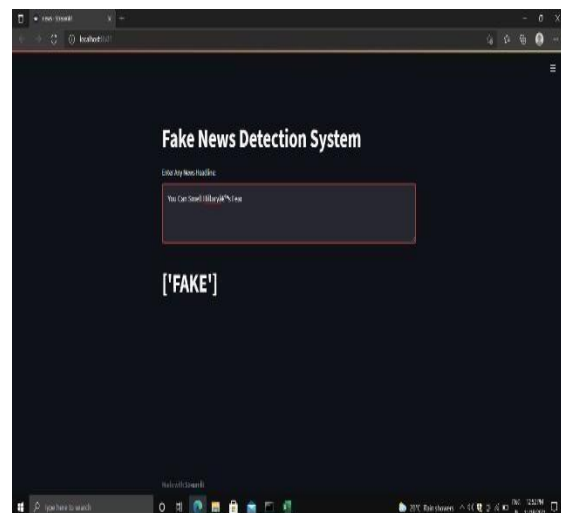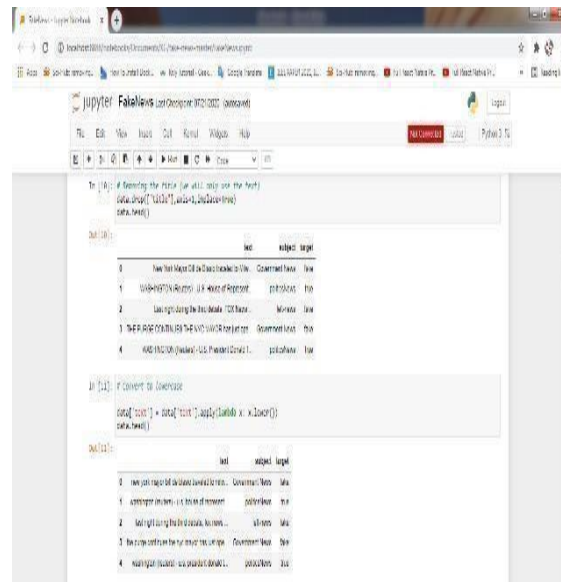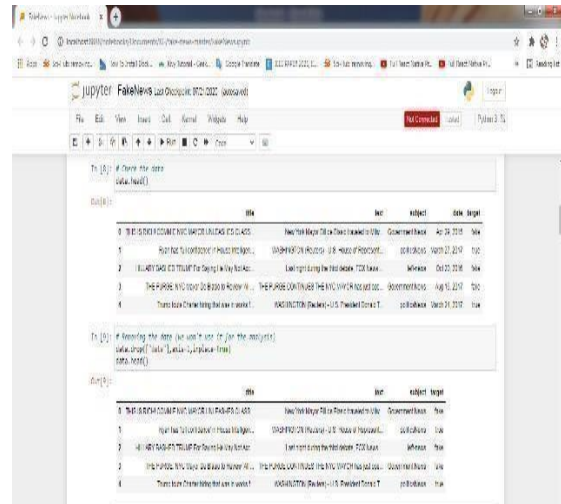
Odds = p/(1-p) = probability of event occurrence / probabilityof not event occurrence

$$\ln(odds) = \ln(p/(1-p))$$

$$logit(p) = \ln(p/(1-p)) = $$

b0+b1X1+b2X2+b3X3….+bkXk

OUTPUT DESIGN:

OUTPUT DESCRIPTION

All real and fake news is put away in the dataset by the administrator and both client and administrator can check whether or not the entered news is genuine utilizing the terminal.

CONCLUSION

The framework was created involving Anaconda as a front-end tool. The framework is created in the wake of concentrating on the prerequisites and necessities of the framework. The framework is made in an easy-to-understand way with a fitting message directing the client. Time utilizations are diminished by large and client as less complexity in dealing with the framework. Fitting mistake messages are given to direct the client in a legitimate and easy-to-use way. The task is completely fledged and easy to use. End clients will be eased up in utilizing the product. Fake News information is dissected quicker when contrasted with existing frameworks with less code.

REFERENCES

[1]   Elias M.Awad, "System Analysis and Design", Golgotha Publishers (P) Ltd., Second edition, NewDelhi, 1992.

[2] James. A Senn, "Python Data Science", BPB Publications, Pune, 2005.

[3]   S.S. I press, "Python programming basics', NS Publications, NewDelhi, 2006, pp.1-180.

[4] S. Parthasarathy, B. W. Khalakar, "System Analysis, Design and Introduction to Software Engineering", Tata Mc Graw-Hill Edition, New Delhi, 2010, pp.39-80.

[5] Roger S. Pressman, "Software Engineering a Practitioner's Approach", Tata McGraw Hill, 1991, 3rd edition.

AGRO WEB VISION

Sindhu. I

Abstract

Despite having visible many improvements in the mass production and accessibility of food, food protection stays threatened with the aid of a range of factors together with the decline of pollinators and plant sickness. In developing international, greater than eighty percent of the agricultural production is generated by way of smallholder farmers, and reviews of yield lackof more than 50% due to pests and illnesses are commonplace. Furthermore, the majority of people suffering from hunger live in smallholder farming families. Fortunately, diseases can be managed by identifying the diseases as soon as they appear on the plant. In addition, with the upward push of the net and cellular technology global, it is simple to get entry to diagnosis statistics on a selected sort of disease. As a result, the prevalence of smartphones with powerful cameras can help to scale up any type of solution that involves crop detection feasible and practical. Smartphones specifically provide very novel tactics to assist discover illnesses because of their computing electricity, excessive-decision displays, and vast integrated sets of add-ons, which include advanced HD cameras. In reality, it's miles estimated that around 6 billion phones might be to be had around 2050. The input to the set of rules in this paper maybe 2D pix of diseased and wholesome plant leaves.

Sindhu. I

V-M.Sc.SS, Department of Software Systems and Computer Science [PG],

KG College of Arts and Science

INTRODUCTION

- It presents classification and detection techniques that can be used for plant leaf disease classification. Here pre-process is done before feature extraction.

- RGB images are converted into white and then converted into grey level images to extract the image of the vein from each leaf.

- Then basic Morphological functions are applied to the image.

- Then the image is converted into a binary image. After that, if the binary pixel value is 0 it's converted to the corresponding RGB image value. Finally by using Pearson correlation and Dominating feature set and Naïve Bayesian classifier dis-ease is detected.

- There are four steps. Out of them, the first one is gathering images from several parts of the country for training and testing.

- The second part is applying a Gaussian filter to remove all the noise and thresholding is done to get them all green color components.

- K-means clustering is used for segmentation. All RGB snapshots are converted into HSV for extracting capabilities.

MODULES DESCRIPTION

The following modules are worked under the KNN algorithm.

- DATASET
- IMAGE PROCESSING
- DATA AUGMENTATION
- TESTING TRAINED MODEL WITH VALUATION DATA

DATASET COLLECTION:

- Data collection is the initial process of collecting images which are used as input for further processing. The enter of photograph statistics should be in. Bmp, Jpg, Png, Gif layout.

- Appropriate datasets are required at all levels of object popularity studies, starting from the education phase to comparing the overall performance of recognition algorithms. All the pics amassed for the dataset have been downloaded from the Internet, searched by using call.

IMAGE PREPROCESSING AND LABELLING

- Pre-processing techniques are implemented to improve the photograph statistics which include photograph cropping technique to change the image size and shape, image smoothing for filtering of noise photo enhancement to decorate assessment, and shade conversion of images.

- Photograph enhancement to enhance contrast and color conversion of pics. To get higher feature extraction, final photos intended to be used as datasets for deep neural network classifiers were preprocessed to gain consistency. Furthermore, a technique of photo preprocessing worried cropping of all of the photos manually, which will spotlight the region of the hobby.

AUGMENTATION PROCESS

- The primary purpose of making use of augmentation is to boom the dataset and introduce slight distortion to the images which helps in reducing overfitting during the training stage.

- Image information augmentation is a way that may be used to artificially enlarge the dimensions of a training dataset by creating modified versions of images in the dataset.

- Training deep learning neural network models on more data can result in more skillful models, and the augmentation techniques can create variations of the images that can improve the ability of the in-shape fashions to generalize what they have got discovered to newphotos.
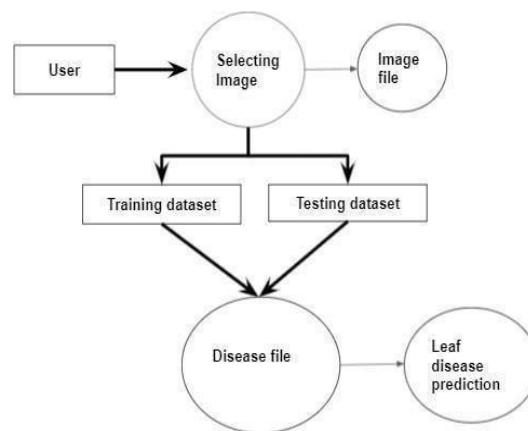
TESTING TRAINED MODEL WITH VALUATION DATA

Finally, the trained network is used to detect the disease by processing the input images in the valuation dataset, and results are processed.
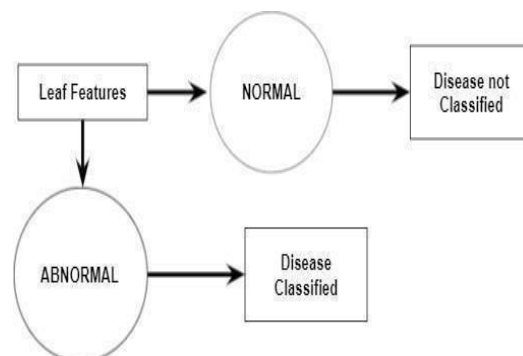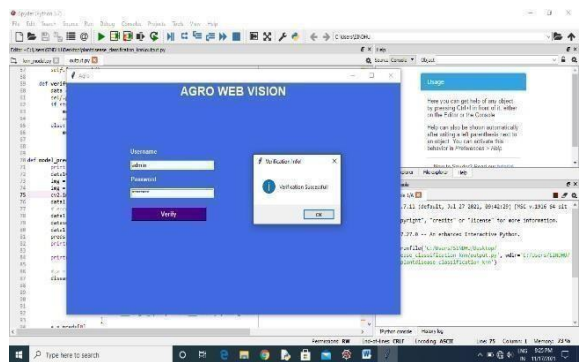
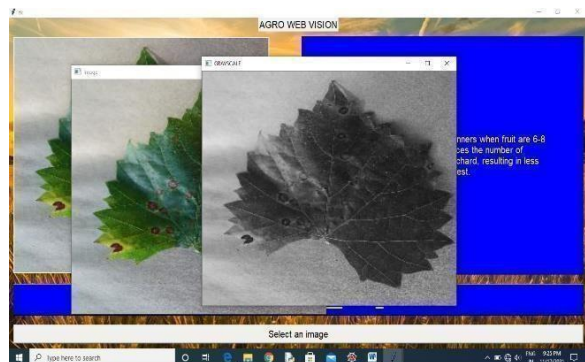**LEVEL 0**

LEVEL 1

LEVEL 2

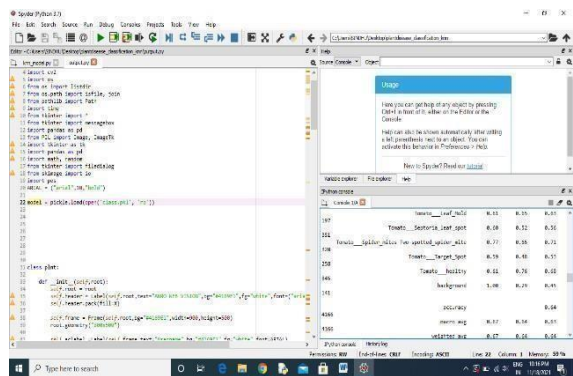While starting to run a program and Login page appears

GRAYSCALE IMAGE

Finally, the disease name will be displayed, and to overcome that disease solution also be displayed

Accuracy of the predicted image

CONCLUSION AND FUTURE WORK

This study has utilized deep learning capabilities to achieve automatic plant disease detection systems. This system is based on a simple classification mechanism that exploits the feature extraction functionalities of KNN. The research was carried out using the publicly accessible collection of images, from experimental conditions and the actual environment. Thesystem has achieved a high overall testing accuracy on publicly accessible datasets and performed well on images of Sukkur IBA University plants. It is concluded from the accuracy that KNN is highly suitable for the automatic detection and diagnosis of plants. This system can be integrated into mini-drones to detect diseases fromplants in cultivated areas. Though this system is trained on a Plant Village dataset with only a few classes it couldtell if the plant has a disease or not as somehow symptomsare the same in all kinds of plants. In addition, more actualenvironment images can be added to the dataset to improve the accuracy of real-condition images of leaves and classify more plant types as well as disease types.

- In the future more enhancement can be done by replacing the KNN clustering mechanism with advanced clustering mechanisms such as Fuzzy C-Mean clustering, More amendments can also be done by using the optimization technique to optimize the SVM classification mechanism.

- A mobile application can be developed with an inbuilt remedial solution that can be used by farmers to detect any leaf, stem, fruit, flower disease including nutrient deficiency easily.

REFERENCES

[1] Sanjay B Dhaygude, Nitin P, Kumbhar Agricultural plant leaf disease detection using image processing Int J Adv res Electr Electron Instrum Eng, 2(1)(2013).

[2] Presilla Mand Rucianawati R, 2014 Pembangunan Sektor Pertanian di Asia Tenggara.

[3] Savita N. Ghaiwat, Parul Arora Detection and classification of plant leaf diseases using image processing techniques Int J Recent adv eng Technol, 2(3)(2014), pp.

[4] Roberti de Siqueira F Robson Schwartz W and Pedrini H, 2013 Multi-scale gray level co-occurrence matrices for texture description Neurocomputing 120p 336-345.

FACE MASK DETECTION

Soundarya. J

Abstract

The Coronavirus pandemic is causing a worldwide wellbeing emergency, so the powerful assurance technique is wearing a facial covering in open regions as per the World Health Organization (WHO). The Coronavirus pandemic constrained legislatures across the world to force lockdowns to forestall infection transmissions. Reports show that wearing facemasks whileat work diminishes therisk of transmission.

An efficient and economic approach to using AI is to create a safe environment in a manufacturing setup. A hybrid model using deep and classical machine learning for face mask detection will be featured.

A facial covering location dataset comprises of with veil and without cover pictures, we will utilize OpenCV to do constant face recognition from a live stream through our webcam. We will utilize the dataset to construct a Coronavirus facial covering locator with PC vision utilizing Java, OpenCV, Tensor Stream, and Keras.

Soundarya. J
IV-MSc SS, Department of Software Systems and
Computer Science [PG],
KG College of Arts and Science

INTRODUCTION

The facial covering Identification framework worked with the OpenCV, Keras/TensorFlow involving essential Profound Learning and PC Vision to identify facial coverings progressively video transfers and alert if a guest is tracked down not wearing a veil. The modelis designed in such a way that it is straightforwardly integrated able with any office. In the current situation because of Coronavirus, there is no effective facial covering identification applications that are presently sought after for transportation implies, thickly populated regions, private locale, enormous scope producers, and different endeavors to guarantee security. A more pressing issue lies in the hands of the populace who energetically decide to either wear covers or not. This has been produced using the viewpoint of any association deciding to computerize their course of following guests who arenot wearing masks.

RELATED WORKS

An advancement face identification innovation then, at that point, has been created named as Viola-Jones detector that was an upgraded procedure of utilizing Haar, computerized picture highlights utilized in object acknowledgment. Like item location, face discovery takes on similar structures as one-stage and two-stage locators, yet more face-like highlights are added to further develop face identification precision. Nevertheless, there is intermittent exploration zeroing in on facial covering discovery. Some existing facials covering pointers have been shown using OpenCV, Pytorch Lightning, Versatile Net, Retina Net, and Support Vector Machines. Existing Google Coral, NVIDIA Jetson Nano is another delineation of the face disclosure model in the existing structure. existing face object area failed because it didn't perform well on faces in dull districts and non-forward-looking countenances.

From here on out, researchers are restless to encourage new computations considering significant sorting out some way to chip away at the models.

MATERIALS AND METHODS:

MODULES DESCRIPTION

- IMAGE PREPROCESSING
- SEGMENTATION
- FEATURE EXTRACTION
- CLASSIFICATION
- ALERT

IMAGE PREPROCESSING

The picture obtained is preprocessed. The preprocessing begins by changing over the RGB picture to L*a*b* shading space. The L*a*b* shading space comprises Glow layer L*, chromaticity layer a*, and b*. All the shading data is put away in layers a* and b*. It needs to make a shading structure, so the RGB-hued picture is changed over to L*a*b* space. The capacity is makecform (), later the organization is applied to the picture that was procured.

SEGMENTATION

There are various algorithms used for segmentation but one of the best methods used for the detection of disease is k- means clustering. k-means clustering is a method of vector quantization, originally from signal processing, which is popular for cluster analysis in data mining. k-means clustering aims to partition n observations into k clusters in which each observation belongs to the cluster with the nearest, serving as a prototype of the cluster. This results in a partitioning of the data space into Voronoi cells. k-means clustering tends to find clusters of comparable spatial extent, while the expectation-maximization mechanism allows clusters to have different shapes.

FEATURE EXTRACTION

The features of the selected cluster will be retrieved. The chosen image will be changed over to grayscale since the picture is in RGB design. At the subsequent stage, the Dark Level Cooccurrence Lattices (GLCM). The necessary measurements are found from dark level cooccurrence Grids (GLCM). The accompanying thirteen elements will be extracted and assessed: Difference, Relationship, Energy, Homogeneity, Mean, Standard Deviation, Entropy, RMS. Fluctuation, Perfection, Kurtosis, Skewness. The thirteen elements are dropped in a cluster.

CLASSIFICATION

Support Vector Machines depend on the idea of choice planes that characterize choice limits. A choice plane isolates between a bunch of articles having different class participations.
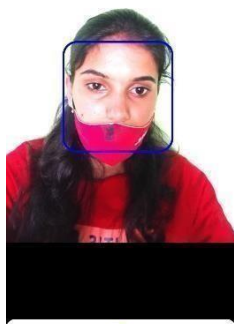
ALERT

This application has an underlying ready framework that can be used progressively in applications requiring facial covering discovery for well-being purposes because of Covid. Using the TTS speech recognition engine in android, the stream automatically shows a pop-up in case a visitor was found with no mask in addition to an alert voice message.

A person entered without wearing a mask

No mask 100.00%+Voice alert (No mask detected please wear a mask)

A person does not wear a mask properly

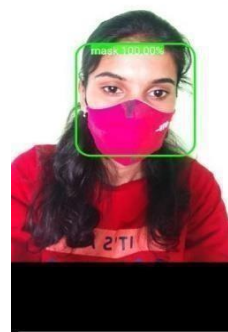Voice alert (No mask detected please wear a mask)

Even if multiple persons enter the camera, this AI technology detects and classifies the person with a mask and without a mask.

Person1: No mask 100.00%+Voice alert (No mask detected please wear a mask)

Person2: Mask 100.00%

Person3: No mask 100.00%+Voice alert (No mask detected please wear a mask)

Person Wore Mask

Mask 100.00%

The individual doesn't need to meet the camera straightly, whether the singular turns out it recognizes and order whether theindividual wore a mask.

Person1: Mask 100.00%

Person2: No mask 100.00%+Voice alert (No mask detected please wear a mask)

CONCLUSION

The framework is done in an easy-to-understand way with a suitable message directing the client. Time utilization is reduced by and large and clients as less intricacy in taking care of the framework. Fitting mistake messages will be given to direct the client in an appropriate and easy-to-use way. End clients will be edged up in utilizing the product. The exhibition

of the framework will be evaluated to decide if the framework accomplishes the outcomes that are normal and regardless of whether the anticipated advantages of the framework are figured out. There are additional opportunities for improving and further fostering the venture with altered reports as indicated by the client's most recent data and necessities. An expansion region for future exploration is to foresee with the assistance of bunching calculations and to give brings about a more precise way. Also, to execute progressed information mining methods into our venture. The framework executable equipment, where programmed mail alarms can send.

REFERENCES

[1] www.w3schools.com

[2] www.codeproject.com

[3] www.msdn.microsoft.com

[4] www.learntoday.com

[5] www.tutorialspoint.com