



SECURITY OF ASSETS USING IP CAMERA ON CLOUD

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Abstract

According to time security contain as the base purpose of any endeavor. There are diverse kinds of situation contain for security like unique mark scanner, iris scanner and face coordinating. Out of all these face coordinating contains great outcome in the present situation. Distinctive machines are there in showcase which finishes the face coordinating situation for security yet they are excessively tedious and contain low precision. Out of every one of that machines IP camera have great outcome for confront coordinating. It comprehends situation of tedious and low precision, however it is getting by from a side face issue and light issue while catching live face picture to coordinate the information.

So as a piece of new development it contain as the construct part to work in light of an exploration that assistance to take care of issue with giving exact yield with low tedious. **Keywords:** IP camera, Face Matching, Face Indexing, Cloud, Authentication

I. INTRODUCTION

Only some authenticated persons can have some access to describe the security in an enterprise. By and by a day when security is major point for an undertaking, check using biometric things is to a great degree dull for generous size of agents. So it is fundamental to display a system that contains low time for enormous size of delegates and easy to use. As a champion among the best usages of picture examination and understanding face affirmation has starting late expanded basic thought especially in the midst of the past a significant extended period of time.

The strong enthusiasm for straightforward structures which can secure our advantages and

guarantee our insurance without losing our character in a sea of numbers is clear at show one needs a PIN to get cash from an ATM a mystery word for a PC twelve others to get to the web and so forth yet to an extraordinary degree trustworthy procedures for biometric individual recognizing evidence exist e.g. remarkable stamp examination and retinal or iris checks these strategies presently can't seem to get affirmation by the all-inclusive community. We used cloud to store data of our photos in light of the fact that it is continually available.

As security get important point to work for an organization, it contain as the base point to have more points to work with. With the time different machines are available for security purpose like biometric things. Out of all these IP camera has good result for making authentication using face matching. If user face data match with the face data that are stored in database user have the permission to access the system.

That thing is implemented by event-related brain potential (ERP) while user is not in working style, to complete that scenario success fully user needs to state their face constant in the camera. But that scenario makes limitations while user is in working mode or while user is walking to some points between.

As per time use of security to secure our enterprise get increase. There are different types of scenario such as finger print scanner, Iris scanner, and Camera use available for security purpose, but out of all that use of camera is increase due to its easy use and low fault tolerance. The first scenario use of analog camera get increase that scenario is called as elastic bunch graph module, in which there is a security person who need to take care of every entry and if he found any unauthenticated entry

he can make action on it. As per time increase it required to store all the data on the internet but it is hard to attach analog camera with internet so a new evolution of camera come into the market called as IP camera. IP camera can easily connect with the internet so all the data can transfer using it. More benefit of using IP camera is it has high-resolution picture. If talking about India only there are total 11to 5 million of peoples per day are fetching on IP camera.

II. LITRATURE SURVEY

2.1 Algorithms used for face recognition

On given some below papers it used face recognition method and for that it used some face algorithms

Y. Wang et al. [1] have preferred approach as an efficient inadequate portrayal calculation, orthogonal coordinating interest (OMP) has pulled in gigantic consideration lately. Be that as it may, OMP and the greater part of its variations assess the scanty vector utilizing the mean square mistake basis, which relies upon the Gaussian suspicion of the blunder circulation. An infringement of this suspicion, e.g., non-Gaussian commotion, may prompt execution corruption. In this paper, a Correntropy coordinating interest (CMP) technique is proposed to mitigate this issue of OMP. Dissimilar to numerous other coordinating interest techniques, our strategy is free of the blunder conveyance. We demonstrate that CMP can adaptively dole out little weights on extremely debased sections of information and extensive weights on clean ones, along these lines decreasing the impact of huge clamor. Our commitment is to build up a strong scanty portrayal construct acknowledgment technique situated in light of CMP. Tests on manufactured and genuine information demonstrate the viability of our technique for both meager estimate and example acknowledgment, particularly for loud, adulterated, and inadequate information.

B. F. Klare et al. [2] Have preferred approach for thinks about the influence of socioeconomics on the execution of face acknowledgment calculations. The acknowledgment exactness's of six diverse face acknowledgment calculations (three business, two no trainable, and one trainable) are processed on an extensive scale display that is divided with the goal that each segment comprises completely of specific

statistic associates. Eight aggregate accomplices are disconnected in view of sexual orientation, race/ethnicity, and oldness gathering. Exploratory outcomes exhibit that both business and the no trainable calculations reliably have bring down coordinating correctness's on similar associates after it remaining the companions inside their statistic, extra tests research the effect of the statistic conveyance to preparation use execution of a known face acknowledgment calculation. That demonstrates the coordinating exactness for competition/society and oldness associates enhanced via preparing solely on that given accomplice. Mainly, given prompts a situation, called active look determination, where various look acknowledgment system is for a biometric framework administrator to choose in light of the statistical data extricated from a test picture. This method should prompt enhanced face acknowledgment precision in numerous insights and law requirement confront acknowledgment situations. At last, we demonstrate that another option to dynamic face matcher determination is to prepare confront acknowledgment Calculations on datasets that are equitably circulated crosswise over socioeconomics, as this approach offers reliably high precision over all companion.

I. A. Sajid et al. [3] Have preferred approach to build up a precise and efficient confront acknowledgment framework, a system is recommended that jelly comprehensive and additionally neighborhood facial points of interest. It utilizes the combined recurrence appropriation bend of dark stages and their stock fluctuation. In view of the FDC, a decreased universe profile is created, which create out of given unmistakable portions. Every fragment related mistake esteem defined in $(0, 1)$. A choice is created assessing blunder esteems among the preparation informational collections freely for each section in the FDC. With every preparing, the proposed system speedier as well as gives to 14, 1.9 and 1.7% change in exactness, light and appearance folders contrasted and other generally utilized face acknowledgment procedures.

S. Lee et al. [10] have preferred approach to Brightening variety for the most part causes execution debasement of face acknowledgment frameworks under genuine situations. In this way, we propose an enlightenment strong face

acknowledgment framework utilizing a combination approach in view of an effective facial element called differential two-dimensional central part examination (D2D-PCA) for buyer applications. Execution assessment of the proposed framework was performed utilizing an expanded Yale confront database B which comprises of 2,414 face pictures for 38 subjects speaking to 64 enlightenment conditions under the frontal stance. Test comes about demonstrate that the proposed combination approach upgraded acknowledgment exactness by 22.02% contrasted with that of 2DPCA, and we affirmed the adequacy of the proposed confront acknowledgment framework under brightening variation environments¹.

J. Gan et al. [12] have preferred approach in which we plan an ongoing face acknowledgment framework in view of IP camera calculation by method for C++ programming improvement. In the meantime, we do look into on the IP camera and change some capacity of SDK so OpenCV can method the video outline. To start with, the AdaBoost calculation is utilized to distinguish a look in each edge, and afterward LBP is utilized to remove the element of surface. At last, we acquire the outcome by SRC calculation. Exploratory outcomes demonstrate that the framework can manage continuous video and have the power to the enlightenment.

J. Gan et al. [15] have preferred approach in which We outline an ongoing face acknowledgment framework in view of camera and picture usual calculation by method for C++ programming advancement. The framework incorporates 3 sections: review module, enlist unit, and an acknowledgment unit. Initially, we add a Boost calculation into the constant face recognition and link the nose discovery for optional run. And afterward we separate surface element from the identified face pictures by the technique for Local Phase Quantization or Local Binary Patterns. At last, confront is perceived in light of picture sets. In the wake of difficult, the framework can method video genuine auspicious and goodly affects confront location and acknowledgment.

2.2 Comparing two images

For authentication purpose it is important part to comparing data of image with live one. As given some below papers work on that purpose

J. Zhu et al. [6] have preferred approach to Matching NIR Face to VIS Face Using Transduction In this approach Visual versus close infrared (VIS-NIR) confront picture coordinating utilizations an NIR confront picture as the test and customary VIS confront pictures as enrollment. It exploits the NIR confront innovation in handling brightening changes and low-light conditions and can provide food for more applications

Where the enrollment is finished utilizing VIS confront pictures, for example, ID card photographs. Existing VIS-NIR systems expect that amid classifier taking in, the VIS pictures of each objective individual have their NIR partners. Be that as it may, since relating VIS-NIR picture sets of similar individuals are not generally accessible. Which is frequently the case, so those strategies can't be connected? The approach can lessen the space distinction because of heterogeneous information and take in the discriminative model for target individuals at the same time. To the best of our insight, it is the first endeavor to define the VIS-NIR coordinating utilizing transduction to address the speculation issue for coordinating. Test comes about approve the adequacy of our proposed strategy on the heterogeneous face biometric databases.

Z. Li et al. [7] have preferred approach to Common Feature Discriminant Analysis for Matching Infrared Face Images to Optical Face Images In this approach in biometrics; it is basic however a test to coordinate x-ray faces pictures to face pictures. The main difficulty lies in the way that an incredible disparity between the x-ray face picture and comparing optical face picture since they are caught by various gadgets. This paper displays another method named regular component examination to lessen this awesome disparity and enhance infrared face acknowledgment execution. In given approach, another based face descriptor is first proposed to separate the normal highlights from face pictures, and a successful coordinating strategy is then connected to the subsequent highlights to acquire the final choice. Broad tests are directed on testing visual x-ray face datasets to

demonstrate the predominance of our style done the best in class.

Y. Sun et al. [8] have preferred approach for Face combine coordinating is the assignment of deciding if two face pictures speak to a similar individual. Because of the constrained expressive data implanted in the two face pictures and additionally different wellsprings of facial varieties, it turns into a very difficult issue. At the issue of couple of accessible pictures gave to speak to each face, we propose to abuse an additional companion set (personalities in the accomplice set are not the same as those being looked at) by a progression of associate rundown examinations. Helpful partner coefficients are then removed from both arranged accomplice characters and arranged companion pictures for corresponding data. To expand its strength to muddled facial varieties, we additionally utilize different face modalities attributable to their correlative incentive to each other for the face combine coordinating the assignment. The final choice is made by utilizing the extricated accomplice coefficients with the direct coordinating score for all the accessible face modalities. To research the limit of every individual methodology on coordinating countenances, the partner conduct, and the execution accomplished utilizing our corresponding companion procedure, we direct arrangement of tests on two as of late gathered multimodal confront databases. It is demonstrated that utilizing distinctive modalities prompts diverse face combine coordinating execution. For every methodology, utilizing our companion plot significantly lessens the equivalent blunder rate. By applying the proposed multimodal reciprocal associate methodology, we accomplish the best execution all over combine coordinating assignment

N. McLaughlin et al. [9] have approach for given paper, we acquaint an approach with confront acknowledgment that at the same time handles three consolidated difficulties: 1) uneven light; 2) halfway impediment; and 3) constrained preparing information. The new style does lighting standardization; impediment de-accentuation and finally confront acknowledgment, in light of finding the biggest coordinating region at every point on the face, rather than conventional fixed-measure neighborhood approaches. Vigor is

accomplished with novel methodologies for include extraction, LMA-based face picture examination, and inconspicuous information demonstrating. On the expanded Yale and AR confront databases for confront identification, our technique utilizing just a solitary preparing picture for every individual beats different strategies utilizing a solitary preparing picture, and coordinates or surpasses strategies which require various preparing pictures. On the named faces in the wild face verification database, our strategy beats practically identical unsupervised techniques. We additionally demonstrate that the new strategy performs aggressively notwithstanding when the preparation pictures are undermined.

Y. Zhu et al. [11] have approach about Still-to-video confront acknowledgment has as of late pulled in consideration from specialists on account of its incredible applications in genuine situations. In it, still, pictures are typically of caliber, caught from agreeable clients under a controlled domain, for example, mug shots, while video clasps might be gained with low resolves and low class, from non-helpful clients under wild condition. As a result of those s contrasts, we decipher the S2V FR as a heterogeneous coordinating issue and propose an approach going for structure various "scaffolds" among persons heterogeneous face modalities. Various geodesic flows are produced associating the subspace of still pictures and the grouped subspace focuses of recordings, which are illustrative and hearty to describe the connection between still pictures and video outlines. Broad tests are directed on two expansive scale benchmark databases, COX-S2V and PaSC, with various acknowledgment undertakings: confront identification and verification. The trial comes about demonstrate that the proposed approach beats the best in class techniques under the Same test settings.

N. Manap et al. [13] have preferred approach for given paper, it depict a keen observation framework to distinguish social faces in audio pictures with requests to cutting edge film reconnaissance frameworks. Framework uses two IP cameras to get the location and area of the question that is a human face. This work video investigation for evaluating area of the protest in a 3D domain and conveying its directions to the PTZ camera, the examination comprises of

calculation advancement in reconnaissance framework with face identification, stereo coordinating, area estimate and usage with IP camera. The last framework permits the PTZ camera to track the articles and gets pictures in high-determination.

P. Anghelescu et al. [14] have preferred approach for paper displays a proficient video reconnaissance framework which comprises of a system camera and a calculation for programmed discovery of the human faces in the observing territory through ongoing video content investigation. The principle commitment of this examination comprises in a product application which can process the pictures got from the camera to distinguish human faces and trigger the way toward sparing the live stream as a video record. The calculation for confront identification depends on the indispensable picture (summed territory table) – a model which permits the computation of the entirety of all pixels esteems from any rectangular range in the first picture by doing just four operations of expansion or subtraction. Moreover, the application likewise incorporates a record containing information about required tests in the discovery calculation by breaking down numerous pictures as formats. The application is composed in C# dialect and test comes about are introduced for pictures with various sizes and foundations.

2.3 Detection of face expression

Face expression contain as the important part for authentication purpose so that user can understand that given person is authenticated or not. Some papers are work on that given below. Y. Yang et al. [4] have preferred approach for a programmed confront picture explanation strategy is proposed by adjusting countenances to various demeanors to a commented on nonpartisan look. This is helpful in diminishing repetitive physical effort for naming picture information in extensive folders. In any case, it is testing a result of the look varieties given by non-unbending look distortions in different looks. Not at all like some regular methodologies gaining sufficient picture layouts to demonstrate the question appearance, is just a solitary given format fundamental for the proposed strategy. The future strategy is autonomous of the look demonstrate and is accessible for inconspicuous countenances. What's more, to introduce

distorting parameters, the creators show a strong fix based estimation strategy. Setting data for highlight indicates is deliberately demonstrated engender the looking way for nearby fix coordinating. The face comment tests are performed on some substantial demeanors, with loud picture qualities, and in low picture resolutions. Correlation comes about with customary strategies show the proposed strategy's predominance on both precision and power.

W. Chen et al. [5] have preferred approach in which, we introduce a string coordinating way to deal with take care of the frontal face acknowledgment issue. String coordinating is an intense fractional coordinating system however not sensible for front face reply because of its prerequisite of universally successive portrayal and nature of human faces, having spasmodic and non-consecutive highlights. So, we collect a conservative String face portrayal, that gathering of strings. The fixed fractional organizing system contain strategy to therefore utilize each bit of the non-impeded location, giving little mind to shape, in the reply process. The allowing comes about exhibit the plausibility and confronting reply. The future technique not just gifted significantly well performance in perceiving halfway blocked faces yet, in addition, proved its perform coordinate organizing between outline appearances and photograph faces.

S. Singh et al. [16] have preferred approach for Video Surveillance is essential to the extent security is concerned nowadays. Business spaces, schools and doctor's facilities, distribution centers and other testing indoor and outside conditions require top of the line cameras with PTZ. The present advances require RFIDs which are exorbitant and thus the security area in all winds up noticeably costly. This paper portrays the utilization of ease single – board PC Raspberry Pi which takes after face recognition calculation written in Python as a default programming condition. This new innovation is more affordable and in this paper, it is utilized as an independent stage for facilitating picture preparing. The paper goes for building up a framework which catches continuous pictures and shows them on the program utilizing TCP/IP. The calculation for confront recognition is being executed on raspberry pi which empowers live video spilling alongside identification of human countenances.

A. Rajput et al. [17] have approach for shading exchange is an outstanding philosophy to exchange shading between pictures with the end goal that shading palette of the subsequent picture should coordinate as of the reference picture. Current pattern towards distributed computing has started the necessity of performing shading exchange remotely by untrusted outsider servers. To address this necessity, we show a framework that tends to the test of performing shading exchange between pictures when the test pictures are in scrambled shape. While standard strategies achieve the assignment of shading move in the plain area, our

Approach is the primary known plan to perform shading move in scrambled space. Moreover, the proposed approach likewise takes care of the issue of security saving stockpiling over cloud frameworks given that the test pictures can stay in encoded shape without requiring any unscrambling. Trial results and security examination show the potential and adequacy of our approach with different application situations.

2.4 Important Features and Methods

For face recognition there are some important features and methods that contain important part given paper for that as below

P. Darvish et al. [18] have preferred approach in that they offer a versatile fluffy molecule filter (PF) (AFPF) technique adjusted to a general question following by IP pan-tilt-zoom camera. PF tests are subjective utilizing fluffy enrolment works and connected to order and arrival highlights. In our boards are displayed and followed in light of inspecting around anticipated positions got by a place indicator and touching locales identified by visual flow. Test highlights are counted in light of fluffy principles. Results demonstrate that our framework has great target-recognition exactness (> 90%), low path discontinuity, and a tall preparing degree, and an objective is quite often situated inside one-sixth of the picture width from the picture center.

P. Darvish et al. [19] have preferred approach for given paper, we offer a fluffy component built technique for online body following utilizing an IP camera. Since a camera utilizes an implicit server, camera control involves reaction time and

system deferrals and in this way, the casing rate is unpredictable and for the most part low (3-7fps). Results demonstrate that our framework has a decent target recognition exactness (> 90%), and low track discontinuity.

S.Feng et al. [20] have preferred approach about this paper introduces an answer of obtaining high-determination confront picture. Rather than utilizing super-determination techniques, a multi-sensor framework which utilizes static cameras to distinguish confront while utilizes an IP speed arch camera to centre to the face recognized is conveyed. As the aftereffect of the framework, a genuine high-determination confront picture is put away on plate. Examinations demonstrate that a promising outcome is accomplished

2.5 Cloud Security

As cloud provide on demand data and also anywhere available data use of cloud increase. As use of cloud increase it contain as base point to give security on cloud.

X. Liu et al. [21] have preferred approach for Web-based social networking locales like Facebook are committed to store all photographs transferred by a consistently developing client base—which means an inexorably costly capacity cost—yet just a small amount of transferred pictures are returned to from that point. In given paper it propose a distributed storing framework that exchanges off calculation of little portion for asked for pictures with capacity given all photographs. A key thought is to transferred JPEG photographs with rougher quantization parameters (QP) for changeless capacity, the adventure signals equality earlier amid backwards mapping to recoup fine quantization container records by means of a greatest a posteriori (MAP) plan. Since by plan the framework ensures recuperation of a unique packed picture, from the client's perspective it is an ordinary distributed storing, whereas from the administrator's perspective there is unadulterated pressure pick up and consequently bring down capacity cost. Exploratory outcomes demonstrate that our stockpiling framework can procure significant capacity funds at generally a similar

K. K. Shah et al. [22] have preferred approach for Distributed computing utilizes a scheme of

remote waiters helped on the web to stock, oversee and process information as opposed to a neighborhood server or a PC. Spread computing gives benefits on request. In the current time, Cloud Computing is much requested administration due to the preferences like high figuring power, less cost of administrations, elite, versatility, unwavering quality, openness and also accessibility. To comprehend cloud security, there are alluded abnormal state distributor's papers. For this audit add up to 122 research paper of security issues in distributed computing till May 2016. For this paper included concentrated graphical and deliberate audit of different research work did on distributed computing. These discoveries demonstrate that the examination in Cloud Computing got more consideration in the course of recent years. There is alluded abnormal state distributor's paper For better comprehension about the security issues in distributed computing. This examination would give experiences to scientists, understudies, distributors; specialists to think about momentum investigate drift in distributed computing, serves to people groups for any issues about distributed computing

M. Wu et al. [23] have preferred approach in which individuals can without much of a stretch utilize any savvy gadget nearby to catch landscape and after that transfer it to the distributed storage. Distributed storage is generally utilized For putting produced interactive media content. Notwithstanding, the danger of conceivably private information spillage can be later cloud stockpiles regularly in an open area. To upgrade the safety and protection of pictures on the distributed storing, we propose a coordinated plan advancing imperceptible computerized watermarking and concealing which depends on the moving strategy. The alteration based plan can accomplish reversible information stowing away, to guarantee the respectability and the classification of the picture information. Also, we utilize the mystery sharing plan to keep the mystery keys to additionally enhance the security of information get to. The assessment comes about demonstrate that the proposed framework can successfully keep the malevolent client from getting to the private pictures.

M. Marwan et al. [24] have preferred approach about the cloud-based medicinal picture is a

promising innovation. Actually, it gives cost-productive administrations and permits joint effort between social insurance environments. In spite of its numerous preferences, moving to this new worldview emerges a few difficulties: specialized, legitimate and administrative. As of late, the medicinal services part has been keen on receiving this innovation to enhance the nature of therapeutic care. In this examination, we propose a security structure in light of multi-cloud condition. On behalf of that, we utilize a mystery part plan a enhance information privacy. Additionally, flexible watermarking method is planned to confirm the uprightness of restorative picture

M. Marwan et al. [25] have preferred approach for Medicinal services organizations create huge measures of therapeutic imaging information consistently that should be prepared and put away. Hence, vast scale stockpiling frameworks and preparing power are required. To address this issue, distributed storage has been as of late actualized in human services parts. Truth be told, it gives versatile computational assets as an administration. Besides, customers are charged in view of their usage of cloud administrations. Despite its numerous focal points, moving medicinal information to an untrusted distributed storage supplier emerges security concerns. Also, wellbeing data ought to be kept classified and mystery. To this reason, we propose an approach in view of the Shamir's Secret Sharing (SSS) strategy and multi-cloud condition to secure cloud-based therapeutic picture stockpiling. In this paper, we apply the proposed strategy to a dark level picture. The aftereffects of usage demonstrate that our answer improves information security by separating the mystery picture into a few offers. Thusly, the proposed approach is a fitting strategy that permits human services associations putting away and sharing patients' therapeutic data among social insurance onscreen characters in a safe and productive way.

III. EXISTING SYSTEM

For existing system related to IP camera there are different scenarios are there while talking about particular home scenario there is an enterprise which is working on it called as "ZIPATO". It is a best scenario till the day for home usage, what it done is it collect picture of camera and send that picture to the administrator now

administrator have the authority to allow that person to enter in the house or to deny the access. It contains the ideal solution for the home usage.



Fig3.1: Home Usage Environment

The same scenario we cannot use in small business use. Because it is very time consuming process for every time give access to employee manually to enter in office. So the same scenario we cannot use for small business use.

To maintain that a new method is used by an organization named as OZEKI, in that scenario no need to internet with an administrator every time. A local host comes into the picture every employee data are stored to a local host and while employee face detected by IP camera it takes data of that face and match it with the data that are stored on local host. If data are match successfully it automatically gives access to that user and if data are not match it deny the access. So time conduct by the process is low and it contain the ideal solution for the small business



Fig3.1: Home Usage Environment [1]

Using same scenario cannot use for large organization which having large amount of peoples working for because local host cannot handle large amount of data and while there are multiple entry are there than it is too much hard to combine al the data. It is almost impossible for a local host to handle all that. So it required as a base point to find a scenario while can maintain the security for the organization having large amount of employee. From the given ideas we can say that there is a scenario for home security and for small business security using IP camera is already available. But that cannot be use for large organization.

Disadvantage of existing system

Existing system is available for small data or on local server only. If data stored on cloud then it is always available and anywhere access. While matching face using IP camera contain some disadvantages as

- 1] Light problem: Problem of matching face due to different light illusion.
- 2] Side face problem: Problem of matching face due to different view of face of a single person.

IV. PROPOSED SYSTEM

As we know, there are different types of scenario available which are fulfilling the requirement of security for home usage and for small business use. But at that scenarios have some limitations while working for large database. So we create a system, which can handle large amount of data. For that we required a large set of database to store all the data a new approach that stores large amount of data on cloud and using that it compare that data with stored data of the employee comes into the picture and it contain as the good result while employee is in front of the IP camera. This process gives perfect output for an organization but it takes around 10 to 12 second to complete the process. That process is time consuming because it collects data from the cloud and in cloud there are core of data. This process having good output but one employee needs to spend around 10 to 12 seconds to get authenticated. Now that much of time is ideal for small business use bur for an organization which having number of employees, hat process is very time consuming.

For solving that problem we create a new scenario on which we convert our whole process into two Parts

- 1) Face Indexing
- 2) Face Matching

Both process work one after one to make our process faster to generate the output. After IP camera get the input it time to match that data with the database to gene rate output at that time our first part come in to the picture. Face Indexing work to decrease amount of data which we are comparing.

Face Indexing work on Influence of Demography algorithm that algorithm convert out cores of data into very limited number of data. So that it is easy to compare that limited number of data with the input. For matching that limited number of data

with input it use face matching scenario to generate a perfect output.

Face matching work on OMP (Orthogonal Matching Pursuit) algorithm, that algorithm compare input points of data with the stored data. If data match successfully it allow employee for the access or else it deny the access.

After both the step our system can generate output which is occurs in less amount of time and generate with low fault acceptance. So the whole system can work to generate a particular output while any employee's data capture by the IP camera. To complete that process it is compulsory for an employee to stay in front of IP camera. So that IP camera can get input data of face and generate the output. Current approach having well results but as per time requirement of user increase and it is base point to fulfill that all the requirement. A new scenario comes into the picture for authenticated the employee even while it is not facing at IP camera. While there are number of employee who is make entry and exit very constantly the same process it very dime consuming. One camera is not able to handle all the data. It takes around 5-6 seconds to complete the whole process, for normal scenario it is an ideal solution but it cannot handle too much employees at a single time. To solving that problem a new process comes into the picture which gets the data even while user is no facing at the IP camera. But as the new process occurs it also having new problem to identity the employee. The new system having mainly two types of problem which are as below

- 1) Side Face Problem
- 2) Light problem

While employee face is not in front of the IP camera it is hard to get the data to match with that stored in database. This type of problem is called as the side face problem, It is not compulsory to have the same light environment every time while getting input so by different light environment it occurs different input by the IP camera.



Fig4.1: Side Face Problem

So every time different input it is hard to match with the same data. So that process can give the fault result and that thing make limitations in our process.



Fig4.2: Light Problem

For solving that type of problems we create a scenario in which we get all side of data in every type of light for a single employee. That thing increases our database to match with the input: So again our whole system takes time to generate the input because as per increase of database it also increases time to compare data with every entry. So our whole system become time consuming and it take around 10-15 seconds to generate the output. Now while employee pass from the IP camera range in no having 10 to 15 seconds. So it contains as the base point to Create a system that wok on the same flow but contain low time. For that we need to increase performance of our both the steps.

- 1) Face Indexing Influence of Demography
- 2) Face Matching OMP (Orthogonal Matching Pursuit)

1) Face Indexing as shown before it work on an Influence of demography algorithm, that algorithm contain the minimum number of time complete all the process in compare to other algorithms. To increase the performance of the algorithm we add hashing on it, Hashing added on the algorithm make process of algorithm faster and execute our system more easily. Hashing is work to make our process easy and faster. Hashing convert that data string into numbers so that it is easy to find data by the number than to using the data string. So process time of face indexing decrease as we add hashing in influence of demography.



Fig4.1: Result of Face Indexing

2) Face Matching is called as the second step of the process as it comes into the picture after the first step called as Face indexing. Face indexing converts cores of data into limited number of data so that limited number of data works as the input for the face matching scenario.



Fig4.2: Result Of Face Indexing

Face matching work on orthogonal matching pursuit algorithm to generate the output, but for our process it is very time consuming so we add a new thing in it called as inverted index step to generate the output. Inverted index step work on invert finding word scenario that makes our process faster and easy to generate the input. Let understand the whole process as shown in diagram. Input face image are the first starting point which is taken from the IP camera and work as the main input of the process and other one which having the same name is called as input data that stored on the cloud. AS Shown on the diagram both are as given and work as starting point of the process,

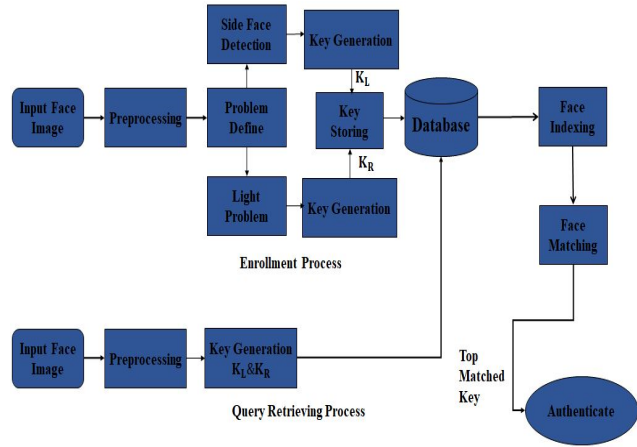


Fig 2: Face Matching System

Second and most important part of the process that use to make our process more easy to use and more faster is called as pre-processing. Pre-processing contains mainly two points which are the first operation that done on the image:

- 1) Normalization
- 2) Face-Masking

Both the processes are used to make our process faster and easy to use. IP camera takes result in high resolution like 128* 128 so to make process on. It is very hard and time consuming so it required as the base point to manage that size of the image and to convert that it into a smallest one.

For that normalization come into the picture, normalization converts our image into a box size image so that our image resolution gets decrease without making any change on process.



Fig4.2: Normalization Result

Face-Masking contain as the second step of the preprocessing and work after the normalization process. Our actual image is in color form so that contain time to make process, color image containing predefine height and predefine width so that numbers are also come into the process to remove that numbers we use face-masking which

convert color image into gray image, as a part of that gray image does not contain any type of height and width so it decrease process time.



Fig4.2: Face-Masking Result

To perform our process successfully it is basic requirement to having a different key for different scenario, that thing make our process complete. Now a problem of key generation is come into the picture. Because it requires as a unique key for every process and that thing contain as the basic requirement for any algorithm. In our process we create a 128-bit of key for a single process and to make it unique for every entry we make partition of it into two parts.

1) Hashing Matrix-6 bit

2) Feature description--64 bit

First 64-bit of key is called as hashing matrix, it create a vector by using distance point between the input face points. So for a same user distance points are same and for different user the same points containing different value.

Second 64 bits are of feature description, in that scenario it convert our input face into different parts of column and rows. Where that column and rows are matching it is called as vector point of the process. So for different face it is different vector points are there. By using that vector points it create a 64-bit of key length and hence the second 64 bit key is generated.

After key generation the next step is called as database on which both keys are match and also it match the input of IP camera with the data of cloud. Next step is called as face indexing as we discuss before and after that it is called as face matching .After that if the data that taken by IP camera match with the data that stored on cloud. System allows access to the employee or else it deny the access.

V. CONCLUSION

In given system there are some disadvantages or some limitation as shown before.

So creation of a system for solving all there problem is required.

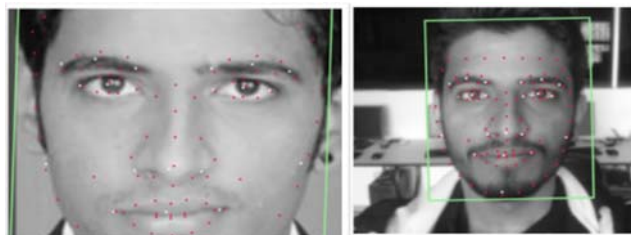


Fig4.2: Final Result

Current system is available for small size data or for local database only. So it is basic requirement for an enterprise to create a system that handles large database .System that also contains low time for solution.

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