A Review: Identification System for Fraud Staffs using Biometric

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ABSTRACT

Fraud staffs syndrome has been a major challenge in many industry. It has led government into spending billions of money resulting from funds siphoned through payments of non-existing staffs. The purpose of this research is to develop a system that uses fingerprint and facial recognition in detecting ghost staffs and double employment. The proposed system can be used to monitor, identify and check the IN and OUT timings of staffs in the university. Object Oriented Analysis and Design Methodology (OOADM) was adopted for its analysis and design The system requires that all teaching and non-teaching staffs enroll either his/her fingerprint and facial recognition for the device to identify and verify if he is a valid staff and also to record daily resumption and closure timings for staffs every month, before payment of salaries to help identify ghost staffs. PHP, HTML and VB 6.0 were used for coding the system. MYSQL was found efficient for the database.

Keywords - Fraud staffs, staffs payment, detecting system, biometric.

OVERVIEW

This paper presents a review of an identification system for fraud staffs using biometric. The system requires that all teaching and non-teaching staffs enrol either his/her fingerprint and facial recognition for the device to identify and verify if he is a valid staff and also to record daily resumption and closure timings for staffs every month, before payment of salaries to help identify ghost staffs. Introduction of fraud staff identification system is present in this **Section I**. section ii discussed the payroll of management records. Human resource management processes was reviewed in **Section II-A. SectionII-B** deals with intrusion technique and **Section III-C**, reviews the related literature in this paper. **Section III,** examines the analysis of the existing system, **Section III-A**, discuss the description of the proposed system. **SectionIV,** shows the architecture system and the discussion of result shown in **sectionIV-A**. Conclusion of the review was discussed in **Section V.**

I. INTRODUCTION

In the world today, labor and wages have been determinants for good governance because they are the major root for industrial actions that are witnessed from time to time. Government spends significant piece of the yearly financial plan on repetitive consumptions. The apparition staff condition has been a significant test establishments and has prompted government burning through billions of naira coming about because of the cash being guided through installments to non-existing staffs. Thusly, this mathematical yearly expansion in wage bill has gotten troubling and along these lines placing the country's economy in peril. In many nations, the production of apparition names is a typical finance misrepresentation that happens in the public administrations [1]. Apparition staffs are characterized as people who get pay from an association without appearing for the job or who may not exist yet their compensations are being appropriated by another person, despite the fact that the beginning of the term phantom staff isn't as expected reported, numerous individuals accepted that apparition staffs appear for brief periods at work and vanish for a significant part of the time and sometimes don't exist however their names are kept on the finance [2].

Poor record keeping in the public services of developing countries contributes to the creation of ghost names on the government payrolls (International Records Management Trust, 2008). The claim that many countries have ghost staffs on their payrolls who receive salaries without working for it has been of major concern. Ghost staffs thus, drain public funds and deprive countries of resources for development [3].

11. MANAGEMENT RECORDS OF PAYROLL

The regular factor adding to the issue of phantom staffs in agricultural nations is helpless records the board frameworks in the public administrations. Most nations especially the immature ones need great staff data frameworks to precisely record and routinely update the finance information bases [4]. Powerless faculty data set outcomes in absence of command over staff because of the failure of government authorities to adequately screen the exercises of representatives. The issues of feeble faculty information base is pervasive in the schooling and wellbeing areas in Africa in view of the enormous quantities of representatives in those areas, combined with ineffectual oversight of staff by heads of government offices [5]. The helpless record the executives frameworks makes errors between the quantity of community workers on the public authority finance and the genuine number of representatives recorded on the staff overflows with the different offices.

A. HUMAN RESOURCE MANAGEMENT PROCESSES

This process includes significant elements of HRM in an association. Each of the functions: planning, recruitment, selection, performance appraisal so forth goes through a cycle

1. Planning Process: Human Resource Planning (HRP) measure reviews HR requirements to ensure that the affiliation has the fundamental number of staffs, with the essential capacities, to meet its destinations, in any case called work masterminding. HRP is a proactive cycle, which both expects and effects an affiliation's future by proficiently guaging the interest for and supply of staffs under developing conditions, and making plans and activities to satisfy these necessities.

2. Recruitment Process: Recruitment is the path toward searching for and pulling in an acceptable number of qualified candidate, from whom the affiliation may pick the most accommodating staff's required. The communication begins when the need to fill a position is recognized and it closes with the receipt of rundown of capabilities and completed application structures. The result is a pool of qualified occupation searchers from which the individual best organizing with the work necessities can be picked. The methods in enlistment measure fuse recognizing verification of business openings, confirmation of occupation essentials, picking fitting enrolling sources and procedures, in conclusion, delivering a pool of qualified volunteers. Business openings are perceived through human resource orchestrating or chief interest. Next is to choose the work necessities. This incorporates exploring the normal arrangement of duties and the work specific and reviving them, if central. Reasonable enrolling sources and methodologies are singled out the grounds that there is no one, best enlisting strategy. Consequently, the most fitting for some arbitrary position depend upon different components, which fuse various leveled approaches and plans, and occupation necessities.

3. Selection Process: Selection is the way toward picking individuals with the significant abilities to fill existing or projected openings. Data and information about applicants concerning current specialists, whether or not for a trade or progression, or outside competitor strangely position with the firm are accumulated and evaluated. The methods in the decision cycle, in climbing demand join preliminary social event of competitors, basic up-and-comer screening, assurance testing, decision meeting, establishment assessment and reference checking, authoritative gathering, down to earth occupation audits, making the utilizing decision, candidate notice, and evaluating the cycle communication. Regardless, every movement in the assurance interaction, from starter applicant gathering and basic screening to the utilizing cycle, is performed under authentic, progressive, and characteristic prerequisites that protected the interests of both competitor and affiliation.

4. Performance Appraisal Process: Performance appraisal might be portrayed as any technique that incorporates setting work rules, studying delegate's genuine presentation near with these standards, and outfitting analysis to the specialist to rouse the worker to take out execution deficiencies or to continue performing better compared to average. Cycle in execution assessment contain three phases: describing execution presumptions, surveying execution, and giving information. In any case, portraying execution suspicion infers guaranteeing that work commitments and standards are clear to all. The assessing execution suggests standing out agents' genuine show from the rules that has been set, which usually incorporates a type of rating structure. Third, execution assessment by and large needs at any rate one analysis gatherings to look at laborers' presentation and progress and making plans for any important development [6].

B. BIOMETRIC TECHNIQUE

Biometric is the identification of humans by their characteristics or traits. Biometrics refers to technologies for measuring and analyzing a person's physiological or behavioral characteristics. Biometric recognition systems are the core of biometric identification systems. They use obtaining gadgets like cameras and checking gadgets to catch

pictures, accounts, or estimations of a singular's qualities and PC equipment and programming to remove, encode, store, and compare these characteristics [7]. Identification systems answer the question, "Who am I?" and do not require that a user claim an identity before biometric comparisons take place. The client gives their biometric information, which is contrasted with information from various clients to track down a match.The answer returned by the system is an identity such as a name or ID number [7]. They establish the genuineness of physiological (e.g. face, fingerprint, iris, retina, hand geometry) and behavioural (e.g. signature, gait) characteristics of a person. The emerging and promising field of biometric recognition has significant commercial potential.It is an extremely reliable source identification system as it is based on what we are.These characteristics are unique to individuals hence can be used to verify or identify a person. Biometrics can be sorted into two classes as shown in table 2.1.2:

S/N	PHYSIOLOGICAL	BEHAVIORAL
1.	**Face Recognition**	**signature**
2.	**Fingerprint**	**voice**
3.	**hand geometry**	
4.	**iris recognition**	

Table 1.

Recognition of faces: uses a photograph or an image or series of images to identify an individual. Fingerprint: a biometrics technology that is extremely useful because fingerprints have long been recognized as the primary and most accurate method of identification. Hand calculation frameworks are normally accessible in two fundamental structures. Two Finger readers only image two fingers of the hand, whereas Full Hand Geometry systems take an image of the entire hand for comparison.

Iris acknowledgment: Based on visible characteristics, widely regarded as the most secure, precise biometrics technology, with high speeds and high accuracy. Signature: the development of the pen during the marking system as opposed to the static picture of the mark. Voice: Voice acknowledgment isn't equivalent to discourse acknowledgment, it is speaker acknowledgment.
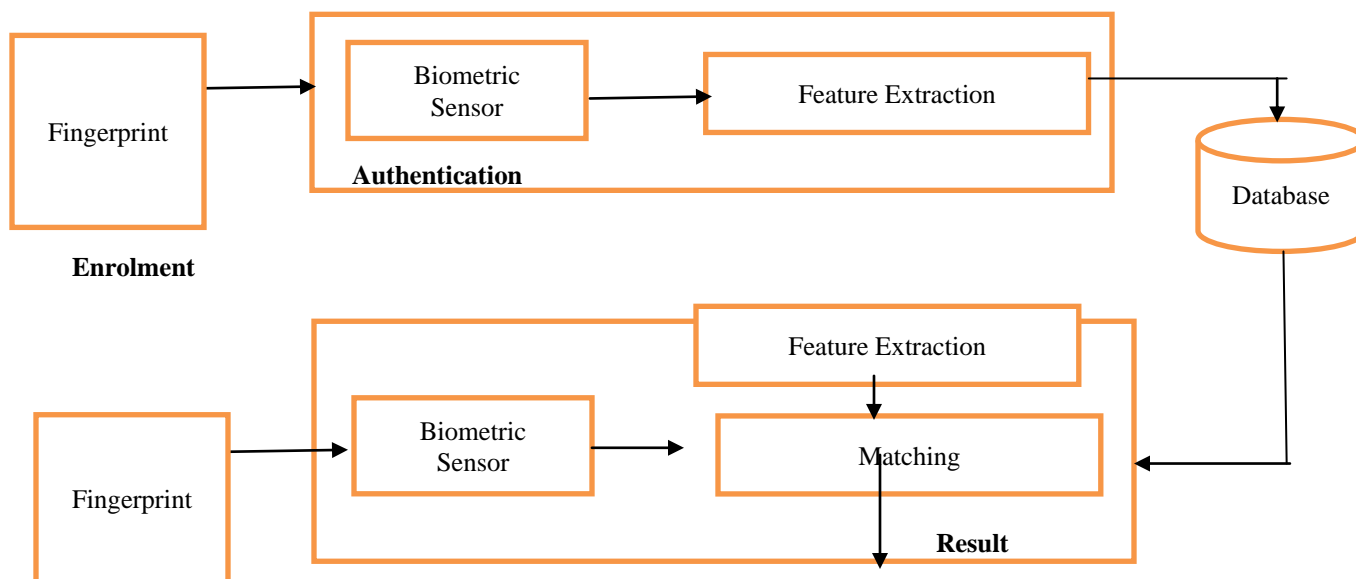

Fig 1.0 Block Diagram of a Biometric Device [8].

C. RELATED REVIEW OF LITERATURE

Within the last decade, the explosion in information systems related literature confirms that information technology, its implementation, uses and benefit is a very well researched area in organizational studies. However, the significance of human resource information systems (HRIS) to strategic human resource management. Nevertheless, a small amount of related case study and survey works exists, some of which has been theorized [9]. Following are some of the existing system.

According to [10], assertthat apparition laborers and related finance extortion have endured out in the open assistance in Nigeria because of its diverse nature and aspects. The investigation discovered that public office holders in LGAs and RDAs in Bayelsa State were associated with ceaseless unapproved business that has swollen the pay bill..

In [11], developed an algorithm that consequently denotes the participation without human mediation. This participation is recorded by utilizing a camera joined before homeroom that is consistently catching pictures of understudies, distinguish the appearances in pictures, measure the pictures, separate a few highlights and contrast the identified countenances and the data set and imprint the participation.

According to [12],the primary benefits of utilizing a biometric framework is that it recognizes an individual by who the individual is rather than what the individual has, not at all like most customary approval frameworks, for example, individual distinguishing proof numbers (PINs), passwords, or ID cards. Dissimilar to these arrangements that depend on "what you have," biometric qualifications, for example, a unique finger impression, finger vein, and palm vein or iris picture can't be lost, neglected, speculated, or handily cloned. He further believed that by using a biometric distinguishing proof framework to dispense with phantom laborers, states and business association representatives can be remarkably recognized, essentially taking out copy enlistment in any structure and annihilating apparition specialist finance misrepresentation in addition to assist with building up responsibility and timeliness among workers.

In [13], study on Human resource management systems and their role in the improvement of vital assets observationally uncovered proof gave a theoretical system connecting human asset the board, hierarchical learning and information the executives. Moreover, the examination fabricated a causal model and tried it with an example of firms from Spanish assembling industry. The analyst fostered the HRM frameworks, information the board and authoritative learning poll. It was planned in a simple to peruse booklet design, which contained inquiries covering various regions. Utilizing postal review, he directed polls to firms with at least 100 representatives from Spanish assembling industry. Notwithstanding, out of the complete populace registration of 2,136, she at long last got 123 substantial survey questionnaires.

According to [14], proposed a system using Principle Component Analysis (PCA). In the examination, PCA was utilized to lessen huge dimensionality of the information spaces that are noticed variable to more modest inborn dimensionality of highlight spaces that are particular factors, which are expected to depict the information financially. The PCA is perhaps the best methods that have been utilized in picture acknowledgment and pressure, as it sets up a solid connection between noticed factors.

According to[15], investigated on Payroll Fraud: Effects of Ghost Names on the Government Wage Bill in Ghana. The target of the review was to broaden Cressy‟s conceptualization of the misrepresentation triangle hypothesis to test the materialness of Reinikka and Svennson‟s unite assessment model by utilizing non-likelihood standard examining framework to choose 85 heads of public organizations for cooperation in a the study. Utilizing connection and various relapses as technique for investigation, the discoveries uncovered a measurably critical, positive connection between the quantity of chances for phantom laborers and the quantity of apparition laborers. Nonetheless, there was a negative connection between the size of government offices and both the quantity of chances for phantom specialists and the quantity of apparition laborers. The ramifications for social change incorporate proposals to reconsider the Financial Administration Act of Ghana by presenting new controls in the finance organization at the Controller and Accountant General‟s office.

In[16], discussion on security needs and (MIS) utilization of Biometric IT-Systems zeroed in on rules in developing Management information systems in tertiary association, so information can be isolated from the undertakings structures and the board outfitted with an improvement for dynamic or information for dynamic. It furthermore proposes for a lot of rules, which can be followed for setting up the security areas for various laborer and PC room in tertiary association game plan. The standards furthermore gave a customary design to various pieces of Information Technology (IT) site status, unequivocally for setting up laborer rooms in an area engage environment.

In [17], propose the use of a fraud detection model to avoid frauds and identity theft problemsduring remote exams. In this work, we conductedan experiment in real conditions in order to validate the proposed solution. Several fraud scenario have been considered; direct communication with a personnearby, the use of unauthorized documents, the use of a second screen smartphone and/or tablet to connectto the internet or sound transmission as sound effectswith fingers or hands or even leaving the room tohave answers, etc.

According to [18] HRM frameworks may incite an upheld advantage through the creation and improvement of data based resources. This was as per the hypothetical framework made and the composition on HRM, which proposed an association between HRMS, key progressive resources and the creation of a proceeded with advantage.

In [19], proposed a Cancelable Fingerprint Templates using Minutiae-based Bit-strings. A low perplexing nature methodology that didn't require set-up was proposed. The system made piece strings (drop capable setups) by arranging the nuances into a predefined three dimensional gathering utilizing the direction of every minutia (the position and course of each reference minutia). Their methodology made cancelable piece strings by changing the reference minutia into another dimensional pack minutia. The strategy was studied utilizing the FVC2004 informational collection and show that the show was superior to that of a past procedure.

III. ANALYSIS OF THE EXISTING SYSTEM

In many institutions, state, federal and private were human asset can't be sidelined, such countless robotized frameworks have been created and sent to abridge the threat of apparition staffs condition in the public help area like work force the executives frameworks, finance the board frameworks and so forth Shockingly, every one of them have demonstrated to be a disappointment in light of the fact that the issue of phantom staffs work condition actually waits in many organizations. Larger part of the current framework model IPPIS has fizzled in the recognition of phantom staffs because of the way that the framework is working dependent on data physically took care of to the framework, the framework doesn't consider everyday exercises of representatives like obligation continue following, off to obligation following, obligation examination following and so forth for example if the requirement for worker record refreshes, non-existing representative can move such, along these lines actually promising such issue. These cheats have caused numerous associations a ton of ridiculous spending. A portion of these cheats are examined below:

1. **Impersonation**: Here a legitimate staff of an institution continuously nonappearance from obligation because of one explanation or the other that is illicitly (not with the information on the association chief) addressed by another real staff or pariah. Whenever the present/consideration of the staff is need, somebody remain for his sake carrying on as though he/she is the first staff. This sort of misrepresentation is supposed to be executed when an individual is disguising a legitimate staff of the organization.

2. **Substituted signing**: Some individuals within an organization usually ask their co-workers to sign participation register for them. This misrepresentation impact the yield of any association as the work implied for some, individuals is being executed by couple of ones. A few group additionally utilize this way to cause plan inside their unit to guarantee that they to go to deal with moving premise. This sort of extortion is recorded exceptionally in government services.

3. **Ghost Worker:** This is one of the most popular frauds that are executed against association participation enrollment framework. A staff that doesn't exist is recorded as an individual from association determined to get benefit(s) implied for such phantom laborer. The culprits of this wrongdoing are consistently those at the administrative role. Advantages, for example, pay and recompenses are the principle purposes behind carrying out this wrongdoing. In a participation register framework, culprit needs not to finish paperwork for the Ghost specialist consistently, marking should be possible toward the finish of consistently making it exceptionally hard for other individual from association to recognize the fraud.

A. DESCRIPTION OF THE PROPOSED SYSTEM

This research work is based on the structure of educating and non-showing staff's biometric participation framework utilizing unique mark and facial acknowledgment confirmation to recognize apparition staffs. The proposed framework can be utilized to screen, distinguish and look at the IN and timings of staffs in the college. The framework necessitates that all instructing and non-encouraging staffs enlist either his/her finger impression and facial acknowledgment for the gadget to distinguish and confirm in the event that he is a legitimate staff and furthermore to record day by day resumption and conclusion timings for staffs each, prior month installment of compensations to help recognize apparition staffs. The essential thought behind this is to keep away from a circumstance where apparition staffs get pay from the organization or staff records counterfeit timings in the manual register but getting full installment for the month. The proposed configuration upgrades gathering of each staff's participation by distant workstations, which are then shipped off the focal data set worker toward the finish of every month for simple handling of pay rates and recompenses. The aftereffect of each staff checking in and out planning is caught by means of a finger impression gadget and a facial acknowledgment at every terminal and put away in the focal information base worker. Every Department far off terminal is interconnected to the focal information base worker through a common organization.

This framework will help the HR administrator to adequately oversee staffs data, Capture biometric staff participation, Keep track of staff execution and preparing, create and keep a record containing all essential records of staff's installments, and forestall apparition staffs name from entering the finance calculation sheet.
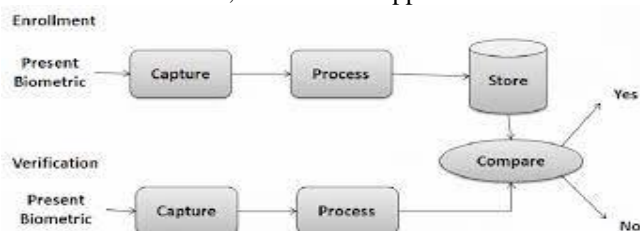

Figure. 1: General Architecture of a biometric system.

IV.   SYSTEM ARCHITECTURE

The architectural design of the Proposed system is of 3 (three) tiers as shown in figure 3. The system was designed based on three layers that manage the activities on the system starting from; **Data Collection** are sensors responsible for storing staffs information, collections of personal details and biometrics. **Data Pre-Processing** in this stage information gets encoded to carry it to such an express, that the machine can without much of a stretch parse it and are processed to generate the basic features and also make the decision with the data of the staff collected. **Result is** the outcome that tells if the details of the staff is recognized or not. After matching the data's of the staff and it is recognized, it prints a report to the admin for clearance of payment and if not recognized sends a report of ghost staff or impersonation and denial payment.
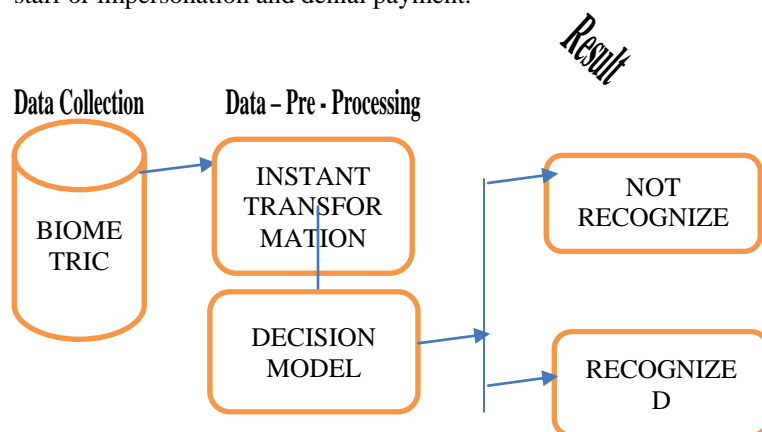

Fig 2: **The Structure of the Proposed System**

A. RESULTS AND DISCUSSION

Biometric detection system for ghost teaching and non- teaching staffs, this verifies and authenticates the validity of a given staff in the institution using fingerprint and facial recognition. The system has the ability of capturing day-to-day attendance of staff that enrolled as a bonafide staff of a given establishment/organization. Any attendance outside the resumption and closing hour of a particular organization/establishment, the staff is been surcharged a given amount as enshrined in the system. The system makes it easier to fish out ghost staffs in their database and staff appraisal has proven easier as the work entails every enrolment processes from the point of recruitment to the point of separation from service. Reports such as staff nominal rolls, payroll reports, appraisal reports to mention but a few can be obtained through the system.

Also, the development of biometric data capture involved many phases. The methodology utilized is a hierarchical one focusing on what first, then how and moving to progressive degrees of subtleties. That's what the examination uncovered, fingerprinting and facial acknowledgment are the significant device for the distinguishing proof of staffs. It is trusted that successful execution of this product item would take out numerous issues found during frameworks examination. This will no doubt result in civil service sanity and with the aid of this system will boasted the reserves of institutions.

Deadlines on issues relating to the employee management (e.g. recruitment, performance assessment, payment of wages, salaries, allowances, size of staff etc.) and other management issues (e.g. surcharge deductions) become administratively and operationally effective due to benefits derived in automation.
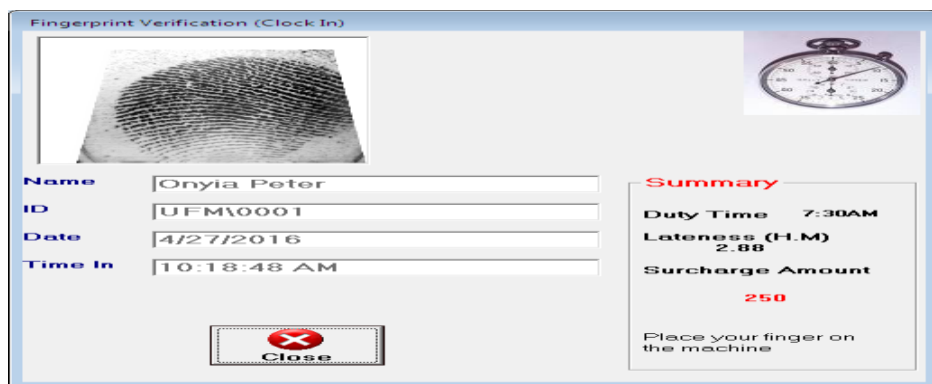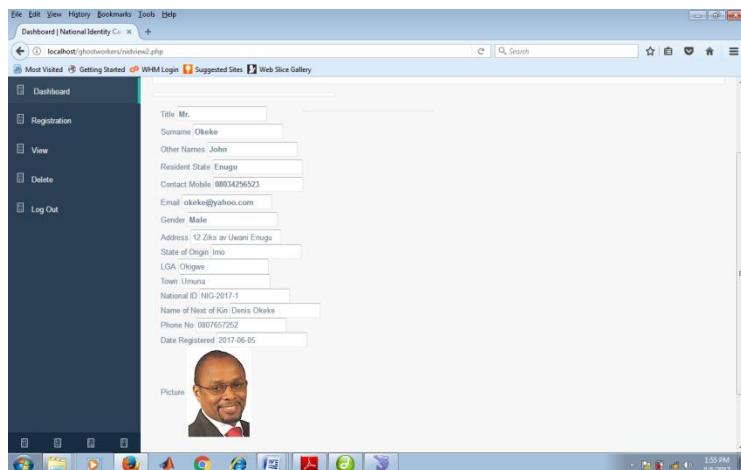

Fig. 3 staff biometric

Fig. 4 staff records

V. CONCLUSION

The detection system for ghost staffs with biometrics will help monitor, prevent and regulate the challenges of handling and fishing out ghost staffs in any institution. This system will keep track of staff performance and training, prevent ghost staffs name from entering the payroll computation sheet and helps the management to avoid some of the downsides of the level documents framework like consistency and security of representative data. The staff compensation module enables the representative to monitor their profit by printing their compensation slip for every month. By creating a ledger that can be used to filter out results, it allows employers to record how much they pay in salaries by employee.

The system provides a better time saving and efficient way of keeping track of employee's performance *evaluation, track records, audit trail, authentications and attendance monitoring, and reducing paperwork by keeping efficient electronic records. It is hoped that effective implementation of this software would eliminate many problems discovered during systems investigation. This will no doubt result in civil service sanity and with the aid of this biometric authentication institutions reserves will be boasted.

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