2.3.1. Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences using ICT tools

Internship Offer Letter

BRAIN O VISION

Ministry of Education
Government of India

To
Namburi Greeshmitha
Dr.VRK Women's Clg of engg and tech

DATE: 16-09-2023

INTERNSHIP OFFER LETTER

Following your application and subsequence interview, we are pleased to inform you that you have been considered as an **INTERN** in our Organization for **JAVA FULL STACK**

It is our hope that you will work as your level best to improve the efficiency and performance of the Organization. We look forward to working with you. Congratulations and best wishes.

START DATE   : **28-09-2023**
ROLE   : **JAVA INTERN**
DURATION   : **SIX WEEKS INTERNSHIP**
INTERN ID   : **BOV23JD081**

Yours Faithfully

Name: Ganesh Nagu Doddi
Designation: Founder & CEO
Brain O Vision Solutions Ind Pvt Ltd

+91 95029 35039
Info.brainovision@gmail.com
www.brainovision.in

Brain O Vision Solutions Pvt. Ltd...
Mohan's Elite, 1st Floor, H.No:2-56/5/50, Madhapur, Khanamet, Hyd – 500 081.
www.fb.com/brainovisionsolutions

Our student Namburi Greeshmitha, CSE IV Year, was offered internship by Brain O Vision in Java Full Stack

Internship Certificate

CERTIFICATE
OF INTERNSHIP COMPLETION

BRAIN O VISION
Brain O Vision Solutions India Pvt. Ltd.

शिक्षा मंत्रालय
MINISTRY OF EDUCATION
सत्यमेव जयते

TO

Date: 08-11-2023

Namburi Greeshmitha
Dr.VRK Women's Clg of engg and tech

This is to certify that **Namburi Greeshmitha** has successfully completed her **SIX WEEKS INTERNSHIP** program with **BrainOvision Solutions Pvt. Ltd.** She has worked on **JAVA FULL STACK** and was actively & diligently involved in the projects and tasks assigned to her. During the span, we found her punctual and hardworking person. Her feedback and evolution proved that she is a quick learner.
Congratulations and Best Wishes.

ROLE   : **JAVA INTERN**
INTERN ID   : **BOV23JD081**
START DATE   : **20-09-2023**
END DATE   : **06-11-2023**

Yours Faithfully

Ganesh Nag Doddi
Founder & CEO
Brainovision Solutions India Pvt Ltd

Dr. Buddha Chandrashekar
Chief Coordinating Officer – AICTE
All India Council for Technical Education

Our student Namburi Greenhitha, CSE IVth year has completed internship in JAVA.

DR. V.R.K WOMEN'S COLLEGE
OF ENGINEERING AND TECHNOLOGY

Approved by AICTE & Premitted by Government of Telangana State
Affiliated to Jawaharlal Nehru Technological University Hyderabad

Aziznagar (V), Moinabad (M), R.R. Dist. 500 075 - T.S.
Contact No. 7893044962 / 08413235962
Website : www.drvrkwomenscollege.com

DATE : 26/08/2022

To

The Manager,

IBM Pvt. Ltd.

Raidurgam,

Hyderabad,

Telangana.

Dear Sir,

Sub : Request for Permission for Industrial Visit

I hope this letter finds you in good health and high spirits. I am writing to formally request permission for a Industrial visit to IBM Pvt Ltd' premises in Raidurgam, Hyderabad on the 3rd of September, 2022.

On behalf of Dr. VRK Women's College of Engineering and Technology, I am writing to formally request permission for 26(CSE,ECE,EEE) students and 2 faculty members from Dr. VRK Women's College of Engineering and Technology to visit IBM Pvt Ltd in Raidurgam, Hyderabad on 03/09/2022. Our purpose is to expose our students to the practical applications of cutting-edge technologies and industry operations.

Your assistance in arranging a guided tour and informative sessions would greatly enhance the educational value of this visit. We assure you of our full compliance with all necessary protocols and regulations.

We look forward to your favourable response and the opportunity to visit your facility.

Thanking you,

Yours faithfully

PRINCIPAL
Dr. VRK Womens College of Engg. & Tech
Aziz Nagar, Moinabad, R.R. Dist.

Industrial Visit

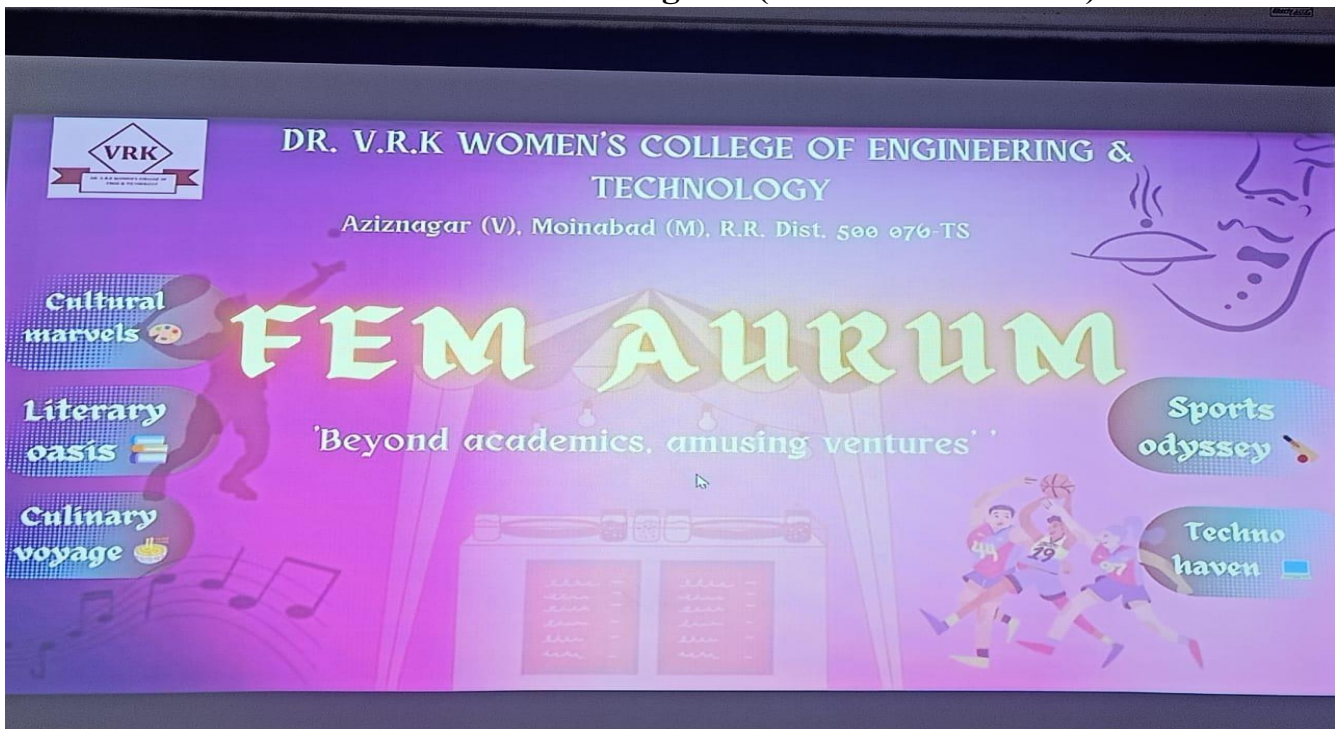## Industrial Visit at IBM India Private Limited, Hyderabad, Telangana.

In IBM company trainer taught about latest Trends and IT industry.

Our students Listening the Presentation about IBM India PVT LTD.

Participative Learning

Annual Cultural Program (FEM AURUM 2022)

Cultural Program Fem Aurum - 2022

Our CSE Students Participated in Rangoli Competition Paper Presentation in Conferences

Paper Presentation

VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution)
(Accredited by NAAC, Approved by AICTE, New Delhi, Permanently Affiliated to JNTU, HYD)
Aziz Nagar Gate, C.B. post, Hyderabad -500 075

Two Day National Conference on Recent Trends in Electronics and Communication Engineering (NCRTECE-2022)

Department of Electronics and Communication Engineering

Certificate of Presentation

This is to certify that Dr./Mr./Ms. Syeda Summaiya of Dr. VRK Women's college of Engineering and Technology, Hyderabad has presented a paper titled on Detection and Prevention of Blackhole node in Two Day **National Conference on Recent Trends in Electronics and Communication Engineering (NCRTECE-2022)**, organized by **Department of ECE, VJIT**, Hyderabad during 08th - 09th December, 2022 .

Dr.S.Thulasi Prasad
Conference Chair

Dr.A.Padmaja
Principal

Dr.E.Saibaba Reddy
Director

Our Student Syeda Summaiya, ECE has presented a paper in National Conference

Paper Publications

Keyword Search and Dual-Server Public-Key Encryption for Secure Cloud Storage

Asmayeen[*1], Dr. B. Sasi Kumar[*2]

[*1] M.Tech Student- CSE, Department of Computer Science Engineering, Dr. V. R. K. Women's College of Engineering & Technology, Hyderabad, Telangana, India

[*2] Principal & Professor, Department of Computer Science Engineering, Dr. V. R. K. Women's College of Engineering & Technology, Hyderabad, Telangana, India

ABSTRACT

A growing number of people are interested in searchable encryption to safeguard the privacy of their data in secure searchable cloud storage. In this research, we examine the security of public key encryption with keyword search (PEKS), a widely used cryptographic fundamental with several applications in cloud storage. Unfortunately, it has been established that the conventional PEKS architecture has a flaw known as an inside keyword guessing attack (KGA) that is perpetrated by a rogue server. We suggest the dual-server PEKS framework as a new PEKS framework to remedy this security flaw (DS-PEKS). One further significant addition is the definition of a new type of smooth projective hash function (SPHF) called a linear and homomorphic SPHF (LH-SPHF). Then, using LH-SPHF, we demonstrate a generic construction of secure DS-PEKS. We propose an effective instantiation of the general framework from a Decision Diffie-Hellman-based LH-SPHF and demonstrate that it can accomplish the strong security inside the KGA to demonstrate the viability of our new framework.

Indexed Terms : Location-Based Social Network, Text Mining, Travel Route Recommendation

I. INTRODUCTION

Cloud computing (equipment and software) is used and shared remotely over a network in what is known as "the cloud" (usually the Internet). In structure graphs, a cloud-shaped picture is commonly used to represent the complex information it contains, hence the name. Through distributed processing, a client's information, code, and estimation can be shared amongst multiple, geographically dispersed organizations. System hardware and software for appropriate processing are available online from supervised pariah groups. Modern programming languages and server PC networks are made possible by these establishments.
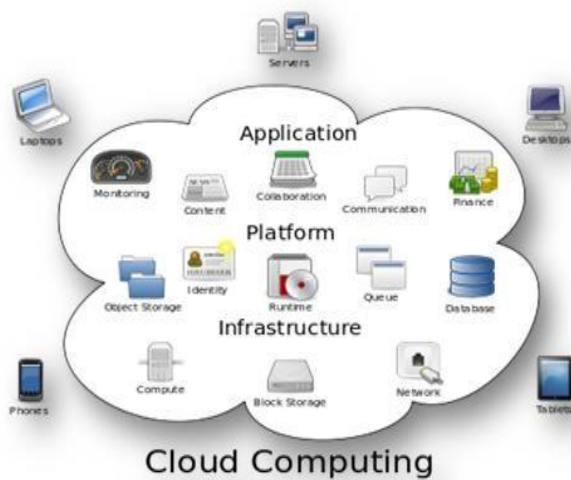
Structure of cloud computing

Explaining the Workings of Cloud Computing.

Traditional supercomputing, or peak execution handling power, is typically reserved for use by the military and assessment agencies. The purpose of distributed registration is to put this type of processing power to use in client-centric applications, such as financial portfolios, the transmission of updated information, the provision of data limits, and the management of massive, visually impressive PC games. Distributed processing makes use of networks of very large groups of servers, which typically run low-cost client PC development and have some connection to dispersing data-handling tasks. Common IT architectures feature massive aggregations of interconnected systems. Virtualization methods are commonly used to increase the efficiency of distributed computing. Characteristics and Service Types: With the NIST's definitions in mind, here are some of the most remarkable aspects of widely disseminated numbers:

- Self-organization on demand: customer can set their limits for things like server time and association storage as needed, without needing to coordinate with each specialist facility individually.

- Capabilities are accessible over the network and can be used by a variety of client types thanks to standardized frameworks (e.g., cells, PCs, and PDAs).

- Resource pooling: In a multi-tenant model, the provider shares its enlisting resources among its many clients, allocating and reallocating its physical and digital assets to each client by their needs. Since the client generally has no control or data over the specific region of the provided resources at this point, there is a sense of region opportunity and the client may have the option to decide region at a higher level of reflection (e.g., country, state, or server ranch). Resource situations consist of constraints, management, memory, data transmission over networks, and virtual machines.

- Rapid adaptability: Capabilities can be provisioned quickly and skillfully, occasionally normally, to rapidly scale out, and immediately conveyed to rapidly scale in. Often, the client has the impression that they can purchase an unlimited amount of provisioning at any time.

- A metering limit appropriate to the type of business is typically used by cloud architectures to manage and expand resource utilization (e.g., limit, dealing with, information transmission, and dynamic client accounts). Both the user and the resource provider can benefit from due, controlled, and definitive resource use.

Characteristics of cloud computing

II. RELATED WORK

1) A new generic framework with a keyword search for safe public key encryption

R. Chen, Y. Mu, G. Yang, F. Guo, and X. Wang are the authors.

Users can search encrypted files on an untrusted server using Public Key Encryption with Keyword Search (PEKS), a technology developed by Boneh et al. in Eurocrypt'04. The cryptography research community has paid a lot of attention to this idea because it has many practical uses. All of the current PEKS schemes, however, have the drawback of being unable to withstand the Keyword Guessing Attack (KGA) initiated by a hostile server. In this research, we present Dual-Server Public Key Encryption with Keyword Search as a new PEKS architecture (DSPEKS). As long as the two untrusted servers do not cooperate, this new structure can withstand every assault, including the KGA. Then, using a fresh iteration of the Smooth Projective Hash Functions (SPHFs), we propose a general construction of DSPEKS that is also of interest.

2) Improved definitions and effective structures for searchable symmetric encryption

R. Curtmola, J. Garay, S. Kamara, and R. Ostrovsky are the authors.

A party can delegate the private storage of his data to a third party while still having the option to conduct limited searches on it thanks to searchable symmetric encryption (SSE). Research on this issue has been ongoing, and several security definitions and constructions have been put out. In this essay, we first examine current security concepts before putting forth new, more robust security definitions. Then, we provide two constructions that, according to our new definitions, are secure. Interestingly, our buildings are more effective than any preceding constructions and also satisfy better security assurances. Additionally, earlier research on SSE only took into account the scenario in which only the owner of the data can submit search queries. We take into account the logical extension where search queries can be submitted by any arbitrary group of parties aside from the owner. In this multi-user environment, we

explicitly define SSE and propose an effective construction.

3) K-Resilient IBE-based Public Key Encryption with Keyword Search

TITLE: D. Khader

Abstract. Bob sends Alice an email that has been encrypted. For some reason, a gateway needs to see if a specific keyword is present in an email or not (e.g. routing). However, Alice does not want anybody else, not even the gateway, to be able to decode the email. This situation calls for the use of public key encryption with keyword search (PEKS). In this study, we develop the KResilient Public Key Encryption with Keyword Search (KR-PEKS), a novel technique. Without the random oracle, the new technique is secure against a chosen keyword attack. The

The KR-PEKS was created using the capability of creating a Public Key Encryption with Keyword Search from an Identity Based Encryption. By demonstrating that the used IBE had a notion of key privacy, the security of the proposed system was demonstrated. The system was then changed in two distinct ways to achieve each of the following: the first change enabled multiple keyword searches, and the second change did away with the requirement for secure channels.

4) Generic secure-channel encryption that is open to search and has adaptive security

K. Emura, A. Miyaji, M. S. Rahman, and K. Omote are the authors.

A public key encryption system with keyword search (PEKS) and its variant secure-channel free PEKS (SCFPEKS) have been proposed for keyword searches against encrypted material. In this research, we expand the security of SCF-PEKS and provide adaptive SCFPEKS, where an adversary is allowed to issue test queries adaptively (modeled as a "malicious but legitimate" receiver). We demonstrate that only anonymous identity-based encryption is capable of generically constructing adaptive SCF-PEKS. In contrast to the PEKS construction by Abdalla et al. (2008), SCF-PEKS can be created without the need for any additional cryptographic primitives, even though

adaptive SCF-PEKS necessitates additional capabilities.

We also provide an alternative adaptive SCF-PEKS structure that is more effective than the previous one while not being entirely generic. In comparison to the (non-adaptive secure) SCF-PEKS scheme by Fang et al., we finally instantiate an adaptive SCF-PEKS scheme (using our second construction) that achieves a similar degree of efficiency for the costs of the test procedure and encryption (CANS2009). 2014 John Wiley & Sons, Ltd. Copyright 5) Cooperative data possession for multi-cloud storage integrity verification 5) Offline keyword guessing attacks using keyword search techniques on modern public key encryption W.-C. Yau, S.-H. Heng, and B.-M. Goi is the author.

Boneh et al. introduced the Public Key Encryption with Keyword Search Scheme (PEKS) for the first time in 2004. The issue of searching through material that has been encrypted with a public key setting is resolved by this scheme. The Secure Channel Free Public Key Encryption with Keyword Search (SCFPEKS) technique, which eliminates the secure channel for sending trapdoors, was recently suggested by Baek et al. Later on, they put out the PKE/PEKS system, an upgraded PEKS method that incorporates a PKE scheme. We discuss offline keyword guessing attacks against SCF-PEKS and PKE/PEKS methods in this work. We show that offline keyword guessing attacks allow external adversaries who intercept trapdoors sent over a public channel to decrypt encrypted keywords. While internal enemies can carry out assaults regardless of whether trapdoors are supplied over a secure or public channel.

III. SYSTEM ANALYSIS

Existing System

- In a PEKS system, the sender encrypts some keywords (called PEKS ciphertexts) with the receiver's public key and appends them to the encrypted data. The receiver then communicates with the server with the backdoor of a search term. The server can determine if the keyword used by the receiver in the PEKS ciphertext is the same as the one used in the trapdoor by comparing the two. If it does, the server will give the recipient the appropriate encrypted information. A new PEKS strategy, called a secure channel-free PEKS, was proposed by Baek et al., which eliminates the need for a secure channel (SCFPEKS).

- Security for SCF-PEKS was improved by Rhee et al. after it was discovered that an attacker may learn about the connection between the nonchallenge ciphertexts and the trapdoor.

- Since users typically employ well-known terms when looking for documents, Byun et al. introduced the offline keyword guessing attack against PEKS.

CONS: The current system has many drawbacks.

- Despite not requiring the dissemination of secret keys, PEKS methods are not completely secure due to a vulnerability in the trapdoor keyword privacy, more specifically the Keyword Guessing Attack (KGA). Security is compromised because anyone with knowledge of the receiver's public key can produce the PEKS ciphertext of any random keyword.

- To be more precise, an adversarial server equipped with a trapdoor can select a guessing term from the keyword space and use it to produce a PEKS ciphertext. When a guess is made, the server can see if it matches the secret keyword. Repeating this process of guessing and testing until the right keyword is identified is possible.

- One problem is that the server does not have a hard time determining which small set the underlying keyword is a part of, even if it cannot guess the

keyword itself. This means that the keyword's privacy is not properly safeguarded from the server. However, their plan is infeasible since the recipient must independently locate the correct ciphertext by utilizing the exact trapdoor to eliminate all but the one correct answer from the set supplied by the server.

THE SUGGESTED SYSTEM:

This study makes four major contributions.

- To fix this security hole in PEKS, we create a new framework we call Dual-Server Public Key Encryption with Keyword Search (DS-PEKS).

- For a more general DS-PEKS design, we present a linear and homomorphic form of the Smooth Projective Hash Function (SPHF) called linear SPHF.

- Using the proposed Lin-Hom SPHF, we demonstrate a generic construction of DS-PEKS.

- In this study, we describe a practical implementation of our SPHF based on the DiffieHellman language to demonstrate the viability of our novel framework.

PROPOSED SYSTEM BENEFITS

- Since our technique does not require any pairing computation, it is more efficient than existing systems that do require pairing computation during the production of PEKS ciphertext and testing.

- It has been determined that our method achieves the highest PEKS computation efficiency. The reason is, our plan leaves out the computation of pairs deliberately. In particular, the current technology has the highest calculation cost because each generation of PEKS requires 2 pairing computations.

- We do not need to perform any pairing computation, and the server takes care of all the searching, so our scheme has a lower computation

cost than any existing scheme, despite requiring an additional step for the testing.

IV. SYSTEM DESIGN

4.1 SYSTEM ARCHITECTURE:
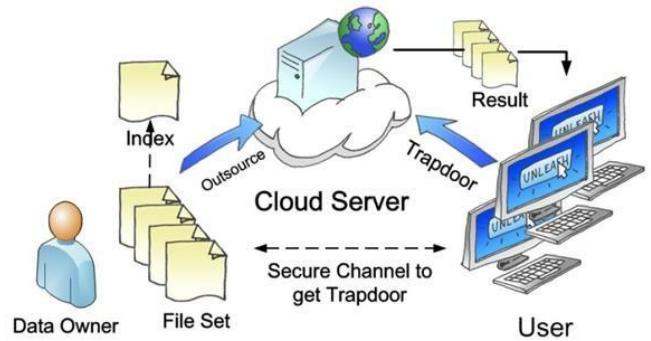
MODULES:

- Module for Building Systems
- Security against Selective Keyword Semantics
- Server at the Front
- Back Server

CONTENTS OF MODULES:
Module for Building Systems

Our first module focuses on building the foundation of our system by creating the necessary data structures and entities. 1) Cloud User: the person or business who initially placed data in the cloud and is now using that data. 2) CSP: cloud service provider, the company in charge of running CSS and selling access to their network's cloud storage space to customers. We introduce the formal concept and security models of the new framework we propose, called DS-PEKS. Later, a new type of smooth projective hash function is defined by us (SPHF). Formal correctness analysis and security proofs are presented to demonstrate a general construction of DS-PEKS from LH-SPHF. In conclusion, we show that SPHF can be used to efficiently implement DS-PEKS.
Security against Selective Keyword Semantics To ensure that an attacker cannot tell one keyword apart from another when presented with a PEKS ciphertext, we implement semantic security against a chosen

keyword attack in this section. In other words, an opponent cannot deduce the underlying keyword from the PEKS ciphertext.

Server at the Front

When the front server receives a query from the receiver, it uses its private key to pre-process the trapdoor and all the PEKS ciphertexts. It then provides the rear server with a set of testing states that conceal the relevant trapdoor and PEKS ciphertexts.

Back Server

Using its private key and the obtained internal testing states from the front server, the back server can then decide which documents are queried by the receiver in this section.

III. CONCLUSION

In this research, we propose a novel framework called Dual-Server Public Key Encryption with Keyword Search (DS-PEKS) to address a flaw in the standard PEKS architecture: the possibility of an inside keyword guessing attack. In addition, we developed a new Smooth Projective Hash Function (SPHF) and applied it to the creation of a generalized DS-PEKS protocol. The research also presents a practical implementation of the new SPHF based on the Diffie-Hellman issue, which yields a practical DS-PEKS method without pairings.

IV. FUTURE WORK

In the Future, Long-Term Impact: In MessageLocked Encryption (MLE), a new cryptographic primitive, the key used to encrypt and decode the message is itself obtained from the message. Numerous cloud-storage companies aim to provide secure deduplication (spaceefficient secure outsourced storage), and MLE gives the means to do so. It defines confidentiality as well as a type of integrity known as tag consistency.

V. REFERENCES

[1]. R. Chen, Y. Mu, G. Yang, F. Guo, and X. Wang, "A new general framework for secure public key encryption with keyword search," in Proc. 20th Australasian Conf. Inf. Secur. Privacy (ACISP), 2015, pp. 59–76.

[2]. D. X. Song, D. Wagner, and A. Perrig, "Practical techniques for searches on encrypted data," in Proc. IEEE Symp. Secur. Privacy, May 2000, pp. 44–55.

[3]. R. Agrawal, J. Kiernan, R. Srikant, and Y. Xu, "Order preserving encryption for numeric data," in Proc. ACM SIGMOD Int. Conf. Manage. Data, 2004, pp. 563–574.

[4]. R. Curtmola, J. Garay, S. Kamara, and R. Ostrovsky, "Searchable symmetric encryption: Improved definitions and efficient constructions," in Proc. 13th ACM Conf. Comput. Commun. Secur. (CCS), 2006, pp. 79–88.

[5]. D. Boneh, G. Di Crescenzo, R. Ostrovsky, and G. Persiano, "Public key encryption with keyword search," in Proc. Int. Conf. EUROCRYPT, 2004, pp. 506–522.

[6]. R. Gennaro and Y. Lindell, "A framework for password-based authenticated key exchange," in Proc. Int. Conf. EUROCRYPT, 2003, pp. 524–543.

[7]. B. R. Waters, D. Balfanz, G. Durfee, and D. K. Smetters, "Building an encrypted and searchable audit log," in Proc. NDSS, 2004, pp. 1–11.

[8]. M. Abdalla et al., "Searchable encryption revisited: Consistency properties, relation to anonymous IBE, and extensions," in Proc. 25th Annu. Int. Conf. CRYPTO, 2005, pp. 205–222.

[9]. D. Khader, "Public key encryption with keyword search based on K-resilient IBE," in Proc. Int. Conf. Comput. Sci. Appl. (ICCSA), 2006, pp. 298–308.

[10]. P. Xu, H. Jin, Q. Wu, and W. Wang, "Publickey encryption with fuzzy keyword search: A provably secure scheme under keyword

guessing attack," IEEE Trans. Comput., vol. 62, no. 11, pp. 2266–2277, Nov. 2013.

Cite this article as :

Webcam-Based Checkout at Grocery Store

Farheen Banu[1]　Dr. B. Sasi Kumar[2]

[1]M. Tech Student -CSE, Department of Computer Science Engineering, Dr. V.R.K Women's College of Engineering & Technology, Hyderabad, Telangana, India

[2] Principal & Professor, Department of Computer Science Engineering, Dr. V.R.K Women's College of Engineering & Technology, Hyderabad, Telangana, India

Abstract:

We generally go to supermarkets to purchase the essential needs such as groceries which are required for our day to day life we see that the billing in supermarket is done by scanning the barcode which is present on the product, due to this the billing process consumes lot of time and even the customer has to wait longer time in the line at the counter when there are some issues in scanning the barcode. So in order to solve the issues the billing system using webcam has introduced where it is implemented with some added functionality to traditional supermarket billing. This system is faster bill generation for customers. With the of webcam the system captures the images of the product and gives the information of the product such as name and price of the product and calculates the bill quickly. By this system we can reduce the time and increase the accuracy.

INTRODUCTION:

This effort has been taken by the grocery business to digitalize billing procedures. The project's database will house these standard templates. After taking a photo of the goods, the computer will look for

Predefined elements in the captured data and contrast them to the stored list of prices. Customers might now have vastly varied bill-paying experiences, depending on whether or not they are enrolled. It's possible that 3D object identification algorithms may prove vital for developing a completely automated billing system that needs nothing in the way of operator participation. Various witnessing algorithms have been developed to boost the effectiveness of, each with its own set of pros and cons in terms of precision, speed, and other metrics. Because of the potential for severe financial fallout from using an inefficient or incorrect computer vision system, simplicity and accuracy are of paramount importance. Barcodes are widely used in supermarkets, convenience shops,

and discount grocery stores to track inventory and produce receipts and bills. Although the distance between the sensor and the goods at the cashier's desk of a food shop may be relatively tiny, laser barcode scanning are nevertheless employed. Either the recipient or the goods themselves must be modified for the billing to take effect. As a result, working conditions for humans become increasingly precarious. especially at large companies where scanning thousands of products and hundreds of clients each day may be a tedious and time-consuming process. The sheer volume of consumers at busy businesses necessitates the daily inspection of hundreds of products, and the time spent looking up each one adds up quickly. The modern consumer has more disposable money but has fewer opportunities to spend it in their immediate vicinity. that's why people prefer to shop at big-box supermarkets for groceries and anything else they need. Longer lines at checkout reflect the fact that customers in big cities have more options to peruse. It may be challenging to read the barcode because of its condition or because of other conditions, such as low lighting or picture quality. Since all products need to be bar coded, switching to a digital invoice system is also expensive. In an increasingly mechanized environment, animals may be put to greater advantage if they were occupied with higher-order cognitive tasks

rather than menial physical work. Thanks to developments in technology, today's computers have astounding levels of processing power and ability to store data. the field of robotics 3D Shape identification, and AI might be used in a real-time automated billing application to lessen the load of routine human labor. The elimination of the need for a human operator is a necessary step toward full automation. In order to reduce the need for interaction between people and enhance the customer experience, it may be possible to create and execute automated billing apps that use computing power and vision. Robustness against partial blockage and an emphasis on orientation are essential for recognition in complicated real-world environments. Local descriptors have various uses because to their computing efficiency and robustness against partial occlusions in areas such as picture retrieval and object id. There are a couple things to remember while using local descriptors. Identifying and quantifying the region of interest is the first step towards retaining just the aspects that are likely to survive changes. Second, the explanation of the compelling point has to be clear, succinct, and resistant to frequent changes. This means that the three main phases of object recognition are indexing/matching, calculating descriptors, and computing local interest points. During the aspect recognition phase of detection, certain

operators are utilized to locate typical landmarks that substantially match in other photos. In the attribute definition phase, the identified features are given labels determined by the surrounding pixels. At this point, we look for shared characteristics between the matched object and the referring entity. Multiple local detection procedures and descriptors have been developed, however they differ considerably in terms of their identification rates, efficiency, computation durations, and memory needs. Finding the correct processes and a happy medium between all the necessary parameters for a bill payments app is crucial. Corner Detectors are used to pinpoint the intersection of three or more edges.

Related works:

Methods for Finding, Tracking, and Recognising Objects in Real-Time through a Video Surveillance System with Modern Cameras

In order for multi-camera surveillance to be effective, object identification and tracking are required. To accomplish these goals, this study presents a design for a succession of vision networks in which lens elements do not overlap. In this research, we provide a mean-shift (MS)based approach to object identification and show how stereo vision depth data may be used to improve discrimination between occluded objects.

After that, a novel tracking method called Bayes Kalman filter with a reduced Poisson mixture (BKF-SGM) is used to follow the objects. To get rid of the exponential complexity rise of regular Kalman filters (KFs), this approach use Gaussian blends (also known as representation for visualizing state or sound densities) and a revolutionary direct density reducing mechanism. Combining a newly developed BKF-SGM with an already refined MS tracker yields an identification system with an everimproving MS technique. An object identification method is offered that requires no prior training in order to track objects throughout a non-overlapping network. Experimental results demonstrate that 1) the provided object detection algorithm outperforms the current modern object detection methods in terms of segmentation, and 2) the proposed measuring technique can successfully manage difficult circumstances with outstanding efficiency and low calculation complexity. Our tracking and detection research may also be used to enhance the efficiency of detection of objects systems that do not rely on training data.

Automatic fruit segmentation and yield prediction using open CV

One major problem with current fruit harvesting methods is that the harvest's yield is not automatically recorded.

Timeconsuming tasks like manually identifying and weighing fruits might be greatly simplified by using image processing methods. The purpose of this research is to develop an automated method for segmenting fruit photos according to their yield based on their color and form characteristics. To get started, we preprocess the incoming fruit tree images. The following thing to do is to remove the rest of the image so that just the fruit remains. Hue thresholding is used to hide the main colours. The application of a filter with a Gaussian shape may help get rid of distracting background noise. A stencil is made by cutting off sections of the picture. After that, the pictures go through some kind of software processing. The results of a fruit count that took into consideration size, shape, and color are shown. The edge detection technique and the circle fits approach are used to automatically extract regions of the picture containing fruits and count them. Mangoes, cherries, oranges, tangerines, lemons, pomegranate apples, and oranges are employed in a mechanical counting process.

Evaluating Methods for Weed Detection

Implementing strategies to reduce weed growth is essential for harvest success. Traditional weed management practices are laborious and inefficient. This is why automating the procedure is necessary. The suggested method use machine learning to detect weeds in farms. This massive dataset includes four common commercial crops as well as many weed species. We are able to hide the surroundings and keep our study location safe by using Otsu's thresholding technique and the additional green method. Weeds and crops may be distinguished thanks to the shape information retrieved from the picture. The three classifications that have been tried and true for weed and crop categorization are the following: Support Vector Machines, deep neural networks, and neural networks based on convolution (CNNs). The Open Curriculum vitae and Keras, two Python libraries, are used to compare the performance of several weed identification algorithms.

Automatic fault identification and classification in woven fabrics using digital image processing

In this research, we describe how defects in fabric may be detected and classified using digital image processing. In addition to illuminating the root causes of these issues, it is believed that this effort will also make defect identification faster and more accurate than is now possible with human vision. We begin by locating the wefts and shifts on the picture and counting them. Locating the weft and warp can help you inspect the fabric for flaws. The interplay between warp and weft may take several

forms in different fabrics. Fabrics that share a pattern with a given sample may be inspected for flaws and classified accordingly. Python, in particular, is being used, together with the OpenCV package. Seven distinct defects are located on the simulated fabric pictures, and five genuine fabric images are used in the experiment. In tests, the system was able to correctly identify flaws 95% of the time, and it calculated fabric densities 50% faster than the human eye.

Methodology:

1. Fill Out the Product Description
2. Model Train
3. Manage Items in Your Shopping Cart

Definition of Subsystems: To upload photographs and write up descriptions, go on over to the Add

Products Details tab.

To teach the avatar using real-world images, open the webcam-connected program and click the "Educate Model" button.

If the same item is selected twice, the Add/delete Commodity From Basket module will remove it. This is accomplished by comparing the image of the product to a database of previously added items.

RESULTS:

Photos of Dettol products have been shown so far; to get started with the identification process, double-click the 'run.bat'.

You may train the model on the above screen by connecting the software to a camera and selecting the 'Train Modelling' option.

When you put an item in front of the camera and click "Add/Remove Goods from Basket," the program will try to identify it and fill in the appropriate information

I've shown one product here, and the results of using the "Add/Remove Goods from Basket" option are displayed below

The area of text at the highest point of the page, which displays the things you've entered and their pricing, may be compared to a virtual shopping basket

CONCLUSION:

In order to streamline the billing processes at the supermarkets, we will be creating a python-based system. This approach will help Digital India in many ways. The improved productivity of this system will be appreciated by both customers and employees. The system's database will be the Python module Open CV. These procedures are efficient and easy to implement. In our future work, we want to improve the algorithm's efficiency and recognition rate while decreasing the frequency with which false positives occur. We are increasing the size of our image library to include more items. The need for human laborers (and, by extension, the availability of employment) will decline as technology eliminates the necessity for such workers. Due to the effectiveness of this strategy, a lot of job may be accomplished swiftly. The testing results show how proficient the system is at precise counting and trustworthy recognition. Improving algorithms will be a primary emphasis of our future work.

REFERENCES:

[1] Atzori, L., A. Iera, and G. Morabito, "Internet and the Internet of Items: A Survey," Information Networks, volume 54, issue 15, pages 2787–2805, 2010.

[2] 2018 International Conference on New Developments in Technology and Engineering Authors: Lizheng Liu1, Bi Zhou2, Chen Feng; "Imagine Learning System for Automatic Identification and Output Prediction of Vegetables using Open CV."

[3] 'Performance Assessment of Weed Classification Algorithm,' IEEE World Congress on Telecommunication and Media Processing, February 4-6, 2019, India; R. Sarvini, S. the role of Sn S. Sukanya as Gowthami J. T., T. Sushmita, and R. Akshay; S.

[4] Vladimir Gorbunov, Evgeniy Ionov, and Aung Naing Lin. Digital image processing-based automatic detection and categorization of weaving fabric flaws. 2019 will see the second annual Green Computing Conference.

[5]https://www.amazon.com/b?ie=UTF8&node=16008589011

According to

[6] in order Zhang, Yanan, H. Yang, and F. Xu. The intelligent service robot uses deep learning for object identification and

detection. Cybernetics and Intelligent Systems: 2018 IEEE International Conference. According to Ester Martinez-Martin and A. C. D. Pobil

[7]. IEEE Robotics and Automation Magazine PP.99(2017):1-1, "Object Screening and Recognition for Friendly Robots."

[8]   Readings Related] Authors Zhang, Shuai and collaborators, "New Objects Detection, Tracking, and Segmentation Approaches for Monitoring Video Over Camera Network." This article may be referenced using the following format:
IEEE Sensors Bulletin 15.5 (2015):26792691.

[9]   This work was co-authored by Paulo E. G. De Oliveira (2006) Fernando Magalhaes, et Manuel A. P. D. R. Martins. The paper is titled "Fast and Lightweight Object Awareness Connect with others: Detection and Classification on Resource-Constrained Devices." IEEE Access, pp.11 (2018).

[10]   Quicker R-CNN: Using Region Proposal Networks for Real-Time Object Detection. Ren S., He K., Girshick R., Sun J. Article 2 [10] Jerry B. and Andrea C. A Primer on Bitcoin for Government Officials. 2013 Mercatus Report, George Mason University's Mercator Centre

GRE

(ETS) GRE®

TEST TAKER SCORE REPORT

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Vaishnavi Ankarla

Most Recent Test Date: November 16, 2023

Address: 18-2-118/5 falaknuma, jangammet, hyderabad, 500053 India

Registration Number: 2525848
Print Date: November 25, 2023
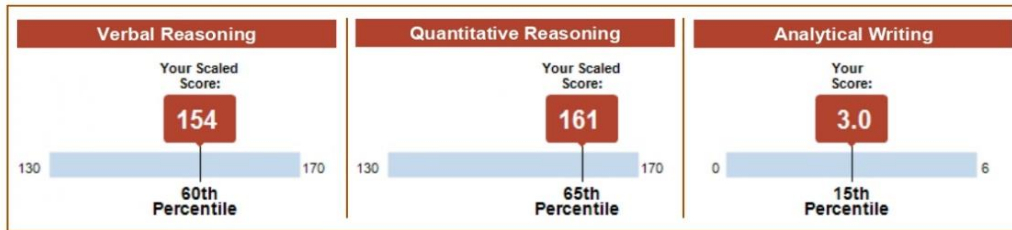
Email: 1234567890ankarla@gmail.com
Phone: 91-9949950426
Date of Birth: August 13, 2002
Gender: Female
Intended Graduate Major: Undecided (0000)

Your Scores for the General Test Taken on November 16, 2023

Verbal Reasoning	Quantitative Reasoning	Analytical Writing
Your Scaled Score:	Your Scaled Score:	Your Score:
154	**161**	**3.0**
130 — 170	130 — 170	0 — 6
60th Percentile	65th Percentile	15th Percentile

Your Test Score History

General Test Scores

Test Date	Verbal Reasoning		Quantitative Reasoning		Analytical Writing	
	Scaled Score	Percentile	Scaled Score	Percentile	Score	Percentile
November 16, 2023	154	60	161	65	3.0	15

Subject Test Scores

You do not have reportable test scores at this time.

Your Score Recipient(s)

Undergraduate Institution

Report Date	Institution (Code)	Department (Code)	Test Title	Test Date

Designated Score Recipient(s)

Report Date	Score Recipient (Code)	Department (Code)	Test Title	Test Date

Our CSE Student Vaishnavi Ankarla cleared GRE

TEST TAKER SCORE REPORT

Note: This report is not valid for transmission of scores to an institution.

Vaishnavi Ankarla

Most Recent Test Date: November 16, 2023

Date of Birth: August 13, 2002

Registration Number: 2525848
Print Date: November 25, 2023

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