

**IN CLOUD COMPUTING, TO INTENSIFY THE SECURITY OF DELICATE  
DATA THROUGH AN AUTOMATED SYSTEM**

Increase Security of Data while Saving space on Cloud

Rajinder Kumar<sup>1</sup>, Er.Jasdeep Maan<sup>2</sup><sup>1</sup>Computer Science Engineering, Bhai Maha Singh college of Engineering, Sri Muksar Sahib<sup>2</sup>H.O.D, Computer Science Engineering, Bhai Maha Singh college of Engineering, Sri Muksar Sahib

---

**Abstract** — This system is used to highly protect the image data by image segmentation (separating the image into sensitive and non-sensitive) and distributing it into private and public cloud. We will store only sensitive part rather than full image to the private cloud. So that sensitive data can be stored efficiently on cloud and private cloud can be used for storage of large amount of information.

---

**Keywords**- Private cloud, Cloud service provider, Image Segmentation, Cloud analyst, License plate.

---

**I. INTRODUCTION**

Cloud computing is one of the today's most inspiring technology in IT field. Actually cloud computing is not a new technology; it is next stage evolution of the INTERNET. You have been using cloud from long period of time, internet associated with all standards and protocols which provides all the web services to you. It is the Internet based technology where user can share resources among different cloud service providers (CSP) and cloud vendors (CV). From computing power to Computing infrastructure, business process to personal collaboration, applications all of it can be provided through the means of cloud. The set of hardware, network, storage and interface enables the delivery of computing as a service in cloud. Cloud computing is also called UTILITY computing because it offers infrastructure to the clients on a pay as you use model by griping on the internet technology. As this model is similar to the electricity billing or water billing system so it is called as utility computing. Cloud is made up of two essential concepts:-

**A. Abstraction:** Abstracting the system implementation details from uses and developers data locations is unknown, system administrations are outsourced to others and access by the users is ubiquitous. There is also no specification for the applications running on the physical systems.

**B. Virtualization:** Virtualization is the main concept for cloud computing. It can be achieved through pooling and sharing resources. Cost is assessed through metered basis. Scalability, elasticity and multi-tenancy are also enabled. Provisioning of system and resources from central infrastructure as needed.

**II. LITERATURE REVIEW****2.1. Privacy Mitigation Methodology**

**AUTHORS:** Chandramohan.D, Vengattaraman.T, Rajaguru.D, Baskaran.R and Dhavachelvan

They focuses on privacy mitigation methodology. Cloud computing is not a new technology; it's a new way of providing services to the user. Security is the main aspect for cloud, in the today's world it's a matter of debate due to the security breach of sensitive and valuable information. They proposed a mitigation methodology based on privacy breach study through algorithm which maintains confidentiality in cloud. They also identified how to preserves the user's secrecy and service level agreement (SLA). The framework explored in this algo is to forecast the future research by developing a third party authentication privacy framework which can interoperate with CSP and cloud users. The following graph depicts the year wise data lost by users and providers.

## **2.2. Automated Management System**

**Authors:** Deepak Harjani, Mohita Jethwani, Nitika Keswaney and Sheba Jacob

They proposed an Automated Parking Management System (APMS) for recognizing license plate for efficient management of parking and billing. Digital Camera is integrated with software module. The SM extracts the License Plate (LP), segments the characters and then recognition of characters takes place. The OCR methodology is used to recognize the character. This module is further interfaced with database to store the images for parking system. MATLAB is used for implemented the Algorithm. Vehicle License plate intelligent system plays an important role in the future traffic management system. The goal of this paper is to recognize LP and store it in the database.

## **2.3. License plate Recognition**

**Authors:** Anish Lazrus, Siddhartha Choubey and Sinha G.R

They proposed a method for LP recognition achieved accuracy of 98 % by optimizing various parameters obtaining higher recognition rates than traditional. In this method gray- scale images can be obtained from the manual car images. The wiener2 filter is used to remove noise and sober filter is used for smoothening of image. The LPR system containing two separate processing stages:

- License Plate Localization(LPL)
- License Plate Character Recognition(LPCR)

This set up has been tested for 50 vehicles. The parameters optimizing for lightning and angle from which image taken are gamma, contrast, brightness, adjustments. Neural Network and fuzzy logic in MATLAB is used to obtain the system.

## **2.4. Intelligent Transport System**

**Authors:** Arulmozhi k, Arumuga Perumal S, siddick A,Krishan Nallaperumal 2012

They proposed the most enhancing model for Intelligent Transport System(ITS) .During LP localization image enhancement technique is applied to solve the problems such as noise ,low contrast , shadow etc. These techniques are also needed to improve skew correction and segmentation. Ostu threshold and adaptive thresholds are used to improve the technique. These types of LP detection methods are applied on the complex scene which provides the enhancement in the images.

## **2.5. Enhance Security over Network**

**Authors:** Fang Hao, Murali Kodialam, T.V.Lakshman and Krishna Puttaswamy

They proposed a document level fingerprints systems to check confidentiality of data. The large amount of data is shared among the users of data. So preventing flow of confidential data becomes the major problem for network operators. Number of users share the same infrastructure. Data is replicated and moved across various regions and also there is lack of ability of control of data. This leads to data leakage. To prevent this data leakage they proposed an algorithm for checking fingerprints on the fly scale to check large amount of documents at very low cost. There are hundreds of data leakage incidents which affects thousands of people. This system is best to protect the data confidentiality. For 1 TB of document their solution requires 340 MB memory to achieve worst case expected detection lag of 1000 bytes. This algorithm computes memory locations of bloom filters to minimize the memories.

## **III. PROBLEM FORMULATION**

Through my literature survey I have founded the major problems in data entry and its security.

- **Manual Data Entry-** In our Indian system all the entries have been done manually. In every area like parking lot, Tool tax, billing system, traffic management there is manual entry system which consumers much more time and moreover a human being is present all the time to take care of it.

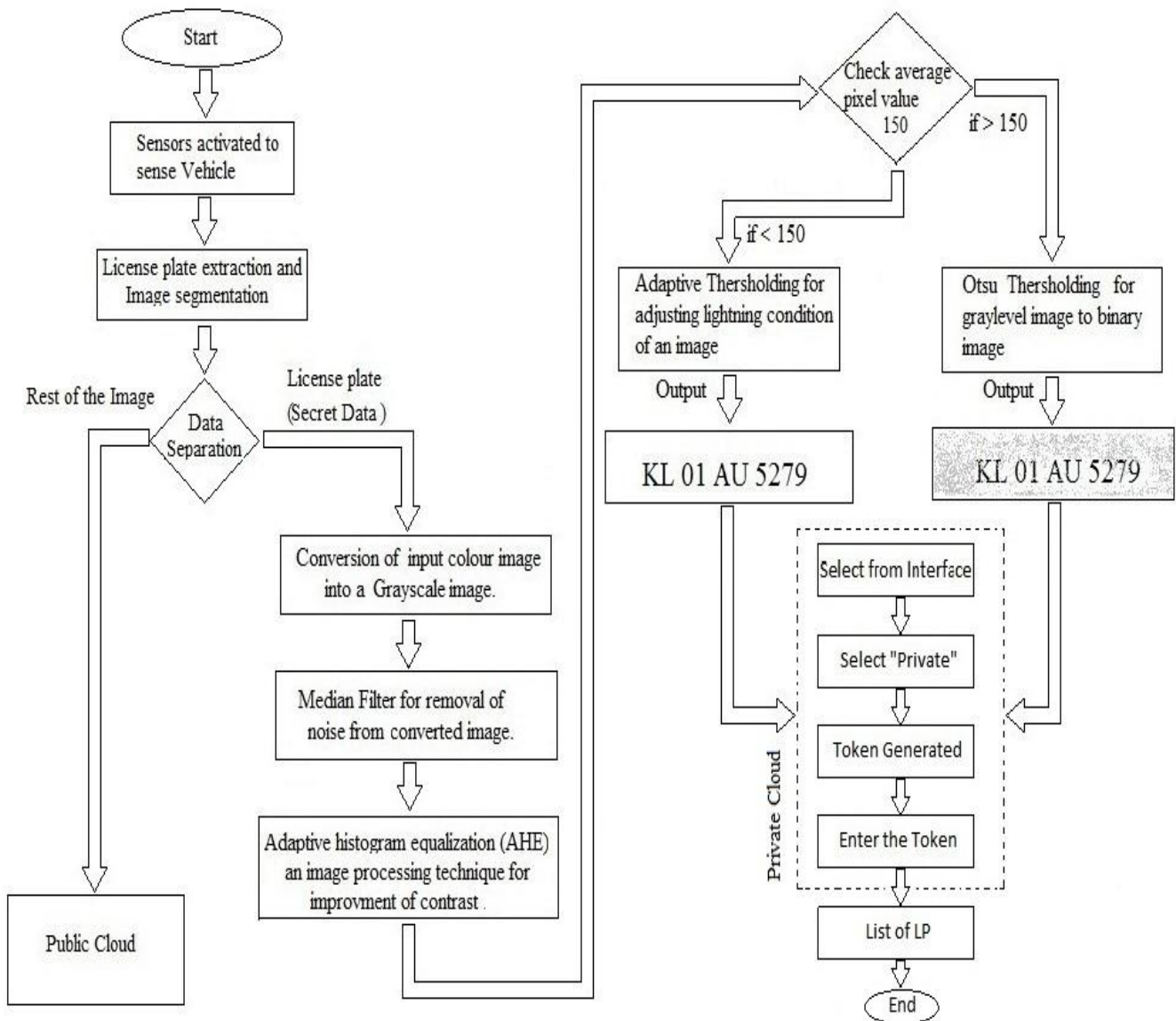
- **Security-** The second major problem is to provide security to this stored data. A large number of data is very sensitive over the internet in today's world. For example digital images, Credit card numbers, User Ids and passwords. So, to protect all this sensitive data from the unauthorized attack is the main motive of cloud providers.

So, we will propose a system which provides automated data entry and security to the cloud systems.

"In Cloud Computing, To intensify the security of delicate data through an automated system" is my problem Definition.

- This proposed system provides the Automated Data Entry.
- Highly protect the image data by segmented it into cloud. Sensitive data will be stored on the private cloud which enhancing its security and also takes less space in private cloud

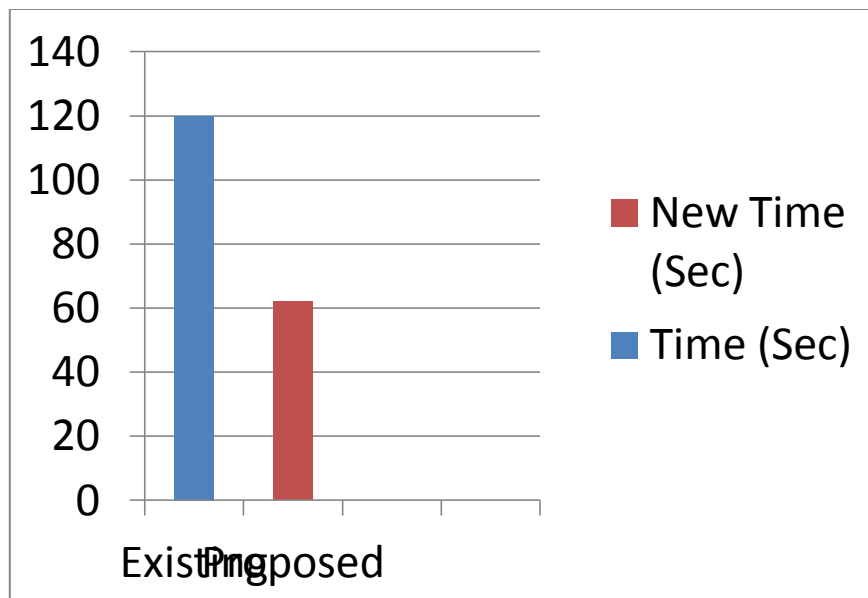
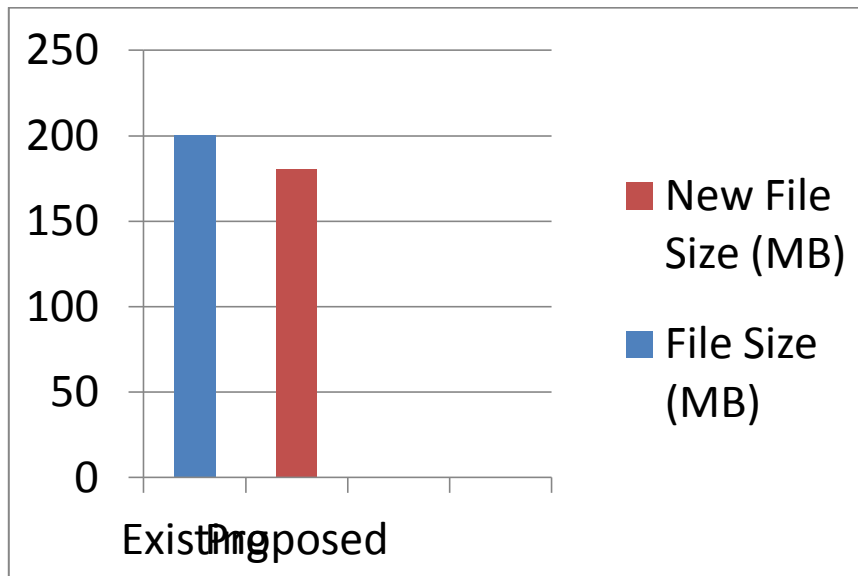
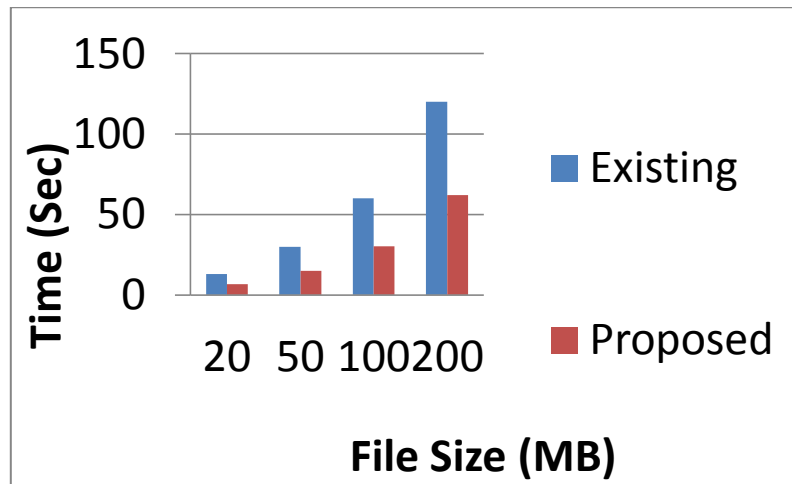
#### IV. PROPOSED SYSTEM



The main objectives of this research work is to Make an automate entry system. The manual system requires humans for 24\*7 and moreover it's not an efficient way of recording large number of entries. So the proposed automated system keeps records of entries for example in parking lot to keep records of all the cars enters in the parking by clicking image with the help of automated cameras and then automatically stores it in the cloud. The other objective of this research study is the proper segmentation of License Plate (LP). Image segmentation and then distribute it to the cloud is the main objective of this research study. After clicking the image, this method analyzes sensitive part of the image and then distributes it into the private cloud. The main steps involving are:

- **Capturing:** Automatically capturing of image with the help of camera and then store it on cloud. Objects are stored in the cloud with the help of their Unique ID's. Each object which is stored on cloud has its unique object ID.
- **Analyzing:** Properly analyze the image and generalize it into sensitive and non-sensitive data.
- **Image Segmentation:** After analyzing image can be segmented into two parts sensitive and non-sensitive data. Like in our case while storing the car images License Plate is the sensitive part and remaining image is the non-sensitive data of the image.
- **Image Distribution:** In this step image will be distributed into Private and Public cloud. Sensitive part will be stored on private cloud whereas non-sensitive data on the public cloud. This step enhances security in cloud because private cloud is totally control under CSP which protects the sensitive and confidential data over cloud.

# **V. COMPARISON OF PROPOSED METHOD AGAINST EXISTING METHOD**



## VI. CONCLUSION

This method is for securing the sensitive pictorial data. This model can be easily used in electronic billing, traffic management, parking lot management and surveillance. We used the OCR for image segmentation. We extract the License Plate number from the car image that is the sensitive part of the car image. Then we sent that data over cloud. The confidential information i.e. LP on the private cloud and remaining image on the public cloud. In this way we provide the security to pictorial data of cars. This is also advantageous even the storage point of view. We can use the private cloud for storing only the small part of image rather than storing the whole image. Therefore private cloud space would be available for many more works or services.

## REFERENCES

- [1] Arjun Kumar, B.G., "Secure Storage and Access of Data in Cloud Computing," ICT Convergence (ICTC) pp.336-339, 2012. Jeju Island: IEEE.
- [2] Behl, A., & Behl, K., "Security Paradigms for Cloud Computing," Phuket: IEEE, pp. 200-205, 2012.
- [3] Chen, D., & Zhao, H., "Data Security and Privacy Protection issues in Cloud Computing," Hongzhou: IEEE., pp. 647-651., 2012.
- [4] E. Anagnostopoulos, C. N., & Anagnostopoulos, I. E., "A License Plate -Recognition Algorithm for Intelligent Transportation System Applications", IEEE, pp. 377-392, 2006.
- [5] Gurudatt Kulkarni & Jayant Gambhir, T. P., "Security Aspects in cloud Computing", 2012.
- [6] Hamdi, M., "Security of Cloud Computing, storage and networking," Collaboration Technologies and Systems (CTS), Denver, CO: IEEE, pp. 1-5, 2012.
- [7] Mahmood, Z., "Data Locations and Security issues in Cloud Computing," Emerging Intelligent Data and Web Technologies (EIDWT), Tirana: IEEE., pp. 49-54, 2011.
- [8] Talasila Sasidhar and P. K., "A Generalized Storage Architecture with Backup Technology for any Cloud Storage Providers," International Journal of Computer Applications, pp. 256-263, 2006.
- [9] Tianfield, H., "Security issues in cloud computing," International Conference on systems, Man, and Cybernetics, Seoul: IEEE, pp. 1082-1089, 2012.
- [10] Watson, P., "A multi-level security model for partitioning workflows over federated clouds," Springer, pp. 1-15, 2012.
- [11] Wu, J., & Ping, L., "Cloud Storage as the infrastructure of Cloud Computing," Intelligent Computing and Cognitive Informatics (ICICCI), Kuala Lumpur: IEEE, pp. 380-383, 2010.
- [12] Zhou, M., & Zhang, R., "Security and Privacy Issues in Cloud Computing: A Survey," Semantics Knowledge and Grid (SKG), Beijing: IEEE, pp. 105-112, 2010.
- [13] A., & Nallaperumal, K., "Image Enhancement Technique On Indian License Plate Localized Image For Improved Character Segmentation," International Conference on Computational Intelligence and Computing Research, Coimbatore: IEEE, pp. 1-6, 2012.
- [14] Bhisikar, P., & Sahu, A., "Security in Data Storage and Transmission in Cloud Computing," IJARCSSE, pp. 410-415, 2013.
- [15] Chandramohan, D. V., "A privacy breach preventing and mitigation methodology for cloud service data storage," 3rd International conference on Advance Computing Conference, Coimbatore: IEEE, pp. 83-88, 2013.
- [16] Deepak Harjani, M. J., "Automated Parking Management System Using License Plate Recognition" IJCTA, pp. 741-745, 2013.