Ai Techniques for Efficient Multiuser Computation for Edge Network Optimization

M. Gajalakshmi MCA[1], S. Jeya Shree[2]

[1]Assistant Professor, Department of Computer Science, Sri Sarada College for Women (Autonomous), Tirunelveli, Tamil Nadu, India

[2]II M.Sc. Computer Science, PG and Research Department of Computer Science, Sri Sarada College for Women (Autonomous), Tirunelveli, Tamil Nadu, India

ABSTRACT

The goal of the network edge is to move computation from cloud servers to the edge of the network devices. AI is a key component in many edge devices, including cars, drones, robots, and smart devices. The project explains the role of AI in a network edge. Moreover, the paper describes the optimization methods for an edge network based on AI techniques. By 2009, Google Apps and Microsoft's Windows Azure also started to provide cloud computing enterprise applications. Secure hash algorithm is used for encryption of data.Load balancing algorithm is to improve the speed and performance of each single device, and the other is to protect each devices from exceeding their limits by reducing the performance.Globus is a online hosted service which allows a browser to transfer files between two sites known as endpoints. To use the Globus software must be downloaded on both systems at the booth ends of the data transfer. Globus will make file transfers, monitor performance, retry failures, recover from faults automatically when possible, and report the status of your data transfer. Grid FTP is used in globus for more reliable and high-performance file transfer. The remote access is possible because of service providers, host applications and their associated data at their location.

INDEX TERMS: Mobile Edge Computing, Edge devices, AI techniques, Cloud computing, Cloud storage, Cryptographic functions, Secure hash algorithm, Load balancing algorithm, Internet of Things.

I. INTRODUCTION

Moving data into the cloud offers great convenience to users since they don't have to care about the complexities of direct hardware management. The pioneer of Cloud Computing vendors, Amazon Simple Storage Service (S3) and Amazon Elastic Compute Cloud (EC2) are both well-known examples[5]. While these internet- based online services provide huge amount of storage space and customizable computing resources, this computing platform shift and eliminating the responsibility of local machines for data maintenance at the same time. As a result, users of their cloud service needs for the availability and integrity of their data.

Cloud Computing has been viewed as the next-generation information technology (IT) architecture for enterprises, for its advantages in the IT history: on-demand self- service, errorfree network access, location

independent resource pooling, rapid resource elasticity, usage-based pricing and transference of risk. As a disruptive technology with profound implications, Cloud Computing is transforming the very nature of how businesses use information technology[6-7]. One fundamental aspect of this paradigm shifting is that data is being centralized or outsourced to the Cloud.

Google drive The pure cloud computing service, with all the storage found online so it can work with the cloud apps: Google Docs, Google Sheets, and Google Slides. Drive is also available on more than just desktop computers; you can use it on tablets like the iPad or on smartphones, and there are separate apps for Docs and Sheets, as well[7]. In fact, most of Google's services could be considered cloud computing: Gmail, Google Calendar, Google Maps, and so on.

II. EXISTING SYSTEM

There is a fast development of transmission technology, the wireless networks has increased significantly, which has promoted the development of Internet of Things (IoT). Which follows a huge amount of access points and traffic data, as well as high transmission and computational tasks, which undoubtedly put forward a much higher requirement on the wireless networks[1]. Therefore, this research on the wireless networks has consistently changed from only the mode of communication and transmission to both wireless transmission and task calculation in application scenarios such as smart monitoring systems, smart transportation systems, and Internet of Vehicles, mobile devices such as phones or smart cars need to continuously receive data and process computational tasks.

The cloud computing is to use the powerful computational capability of the cloud server to make up for the lack of computational capability of the local devices, which reduces the system latency to a certain extent[8]. However, the energy consumption (EnC) and latency caused by the transmission of the computational tasks offload to the cloud server cannot be ignored, and the computational tasks are sent to the remote cloud servers, which will cause the user's confidential information to be eavesdropped.

Therefore, researchers proposed mobile edge computing (MEC) technique, which is an extension of cloud computing technology. An accessible computational access point (CAP) is established at the edge of a mobile network, providing mobile devices with intelligent services, such as the computational resources and storage resources. Since the CAP is often close to mobile users, it can help reduce system EnC and latency, improve user experience, and meet the needs of mobile networks for agile connections.

III. PROPOSED SYSTEM

Cloud Computing is visioned as the next-generation information technology (IT) architecture for enterprises, for long list of helpfulness in the IT history: on-demand self-service, ubiquitous network access, location independent resource pooling, rapid resource elasticity, usage-based pricing and transference of risk .As a disruptive technology with profound implications, Cloud Computing is transforming the very nature of how businesses use information technology[3]. One fundamental aspect of the paradigm shift is the data is being centralized or outsourced to the Cloud. By users' perspective, including both individuals and IT enterprises,

storing data remotely in the cloud by a flexible on-demand manner brings appealing benefits relief for storage management, universal data access with independent geographical locations, and avoid the capital expenditure of hardware, software, and personnel maintenances. While Cloud Computing makes these advantages more appealing than ever, it also brings new and challenging security threats towards users' outsourced data[10]. So cloud service providers have separate administrative entities, data outsourcing is actually relinquishing user's ultimate control over the fate of their data.

Assume the large size of the outsourced electronic data and the client's constrained resource capability. In order to solve this problem, many schemes are proposed under different systems and security models. It provides great efforts are made to design solutions that meet various requirements: high scheme efficiency, stateless verification, unbounded use of queries and retrieve ability of data, etc.

Then, clients are able to delegate the evaluation of the service performance to an independent third party auditor (TPA), without devotion of their computation resources. In the cloud, the clients themselves are unreliable or cannot afford the overhead of performing frequent integrity checks. Thus, for practical use, it seems more rational to equip the verification protocol with public verifiability, which is expected to play a more important role in achieving economies of scale for Cloud Computing. That is, the outsourced data themselves should not be required by the verifier for the verification purpose.
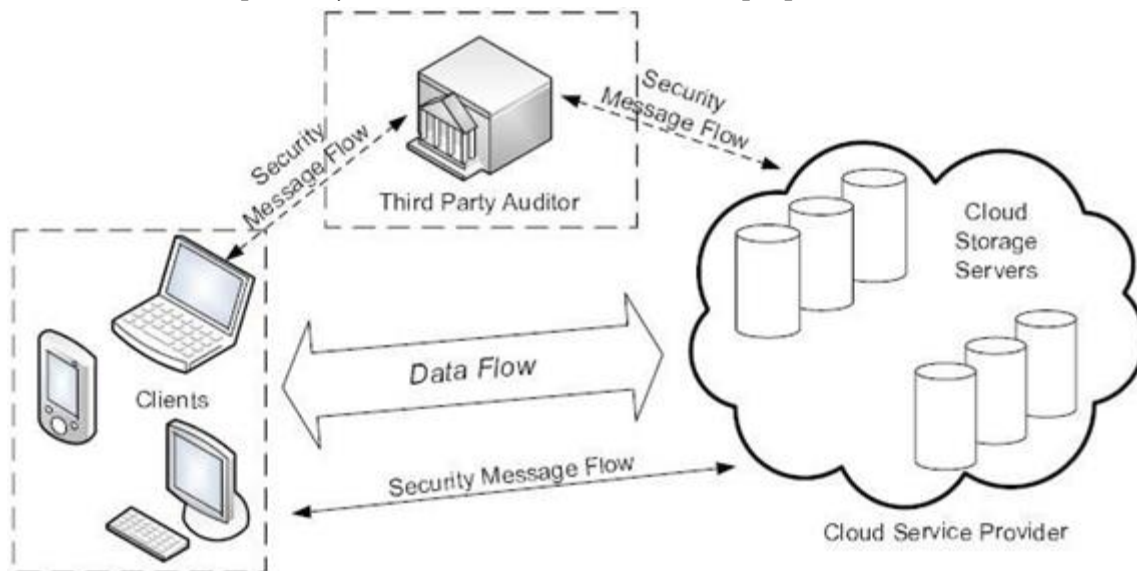

CLOUD ARCHITECTURE

IV. RESULT

Cloud is a emerging areas and components within the Information Technology space. It is a virtualization techniques which is achieved by the help of internet . The change in education environment has compelled educational institutions to discover alternatives to optimize their data technology platform's costs and operational effectiveness. Online storage, such as cloud , can be used as an overarching term. It can also refer to storage services where you can upload your files without having to keep a copy locally.
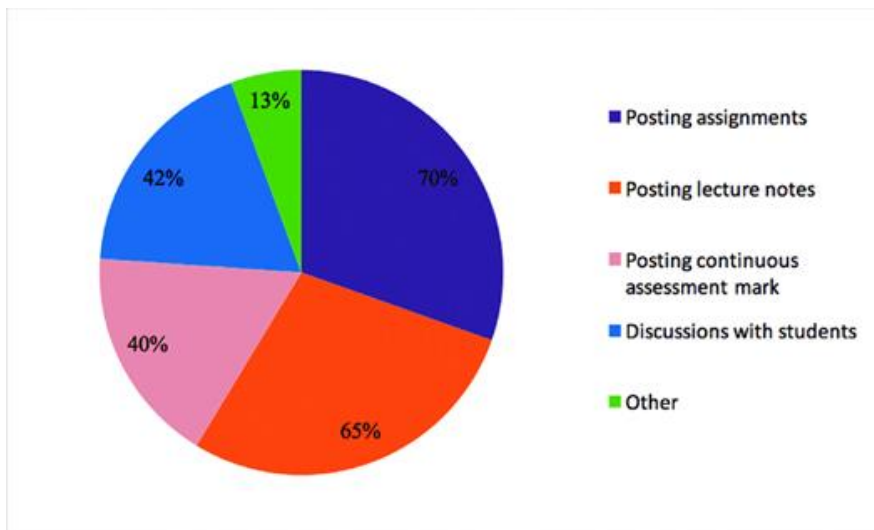
Cloud storage is more safe and also saves the burden of manually transferring the files.The algorithms in this graph are used to analyse cloud usage,edge computing ,internal data and outer database.
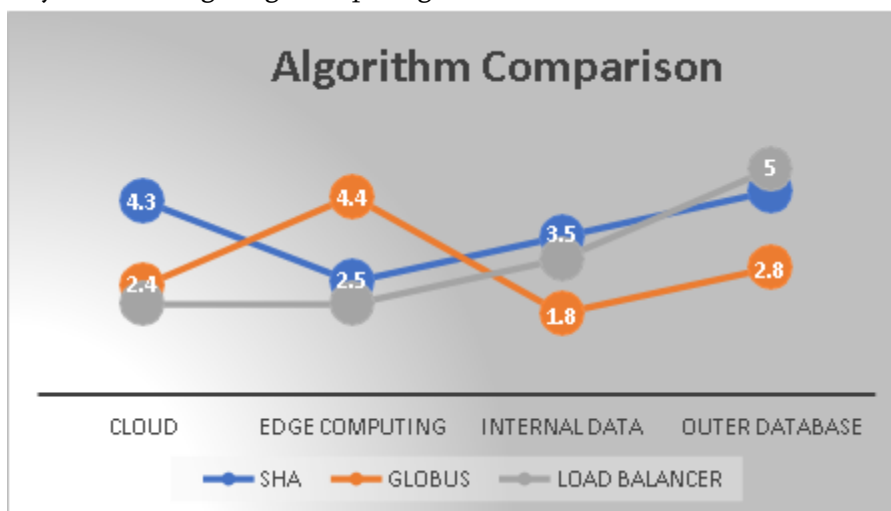
V. CONCLUSION

Assume the time, computation resources, and even the related online burden of users, we also provide the extension of the proposed main scheme to support third-party auditing, where users can safely delegate the integrity checking tasks to third- party auditors and be worry-free to use the cloud storage services. By detailed security and extensive experiment results, it shows scheme that is highly efficient and resilient to Byzantine failure, malicious data modification attack, and even server colluding attacks.

Once the data is stored in the cloud, it is easier to get back-up and restore that data using the cloud. Cloud applications improve collaboration by allowing groups of people to quickly and easily share information in the cloud via shared storage. Cloud computing allows us to easily access all cloud data via mobile.Cloud computing offers Application Programming Interfaces (APIs) to the users for access services on the cloud and pays the charges as per the usage of service.

VI.REFERENCES

[1]. M. Arrington, "Gmail disaster: Reports of mass email deletions," Online at http://www.techcrunch.com/2006/12/28/gmail-disasterreports-of-mass-emaildeletions/, December 2006.

[2]. G. Ateniese, R. Burns, R.Curtmola, J. Herring, L. Kissner, Z. Peterson,and D. Song, "Provable data possession at untrusted stores, "in Proc. of CCS'07, Alexandria, VA, October 2007, pp. 598–609.

[3]. A. Juels and J. Burton S. Kaliski, "Pors: Proofs of retrievability for large files," in Proc. of CCS'07, Alexandria, VA, October 2007, pp.584–597.

[4]. J.Kincaid,"MediaMax/TheLinkupClosesItDoors,"Onlinehttp://www.techcrunch.c om/2008/07/10/mediamaxthelinkup-closes-its-doors/, July 2008.

[5]. Amazon.com, "Amazon s3 availability event: July 20, 2008,"Online at http://status.aws.amazon.com/s3-20080720.html, July 2008.

[6]. C. Wang, Q. Wang, K. Ren, and W. Lou, "Ensuring data storage security in cloud computing," in Proc. of IWQoS'09, July 2009, pp.1–9.

[7]. Amazon.com, "Amazon web services (aws)," Online at http://aws.amazon.com/, 2009.

[8]. Sun Microsystems, Inc., "Building customer trust in cloud computing with transparent security," Online at https://www.sun.com/offers/details/sun transparency.xml, November 2009.

[9]. S.Wilson,"Appengine outage,"Online a http://www.cioweblog.com/50226711/appengine outage.php, June 2008.

[10].X. Hu, C. Zhong, Y. Zhu, X. Chen, and Z. Zhang, ''Programmablemetasurface-based multicast systems: Design and analysis," IEEE J. Sel.Areas Commun., vol. 38, no. 8, pp. 1763–1776, Aug. 2020.