iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 9 **Issue:** X **Month of publication:** October 2021

DOI: https://doi.org/10.22214/ijraset.2021.38524

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue X Oct 2021- Available at www.ijraset.com

Secure Cloud Optimization for Tenants, CSP and User Via Deep Learning

Dr. Kannadasan R.[1], Neehit Varshney[2], Siddharth Malhotra[3], Tanishq Nagpal[4]
[1, 2, 3, 4]*VIT University, Vellore*

Abstract: ***In cloud choosing a right option suitable for CSP, Tenant and user are a challenging task. The proposed system defines a selection mechanism for the cloud service provider (CSP), Tenant, and user. The algorithm designs a service provider that leverages the client for efficient resource allocation for Cloud. Further the system leverages a deep learning metrics to analyze the cloud service provider, tenant and users requirements. The system deliberates a Profit/loss calculator to describe the percentage of profit/loss while choosing. The profit/loss that occurs during allocation or transaction is predicted and suggestions are provided. These strategies are secure, efficient and cost-effective. The monitoring metrics are done with help of deep neural learning (DNL) and Profit/loss Calculation that provides a complete analysis in the cloud. In this process considering the rating, report, or feedback a trustworthy selection is made and a recommendation process is handled for choosing a right option. The experimental results show that the proposed model can benefit both the cloud service provider and users by configuring proper allocation strategies.***

Keywords: Recommendation, deep learning, profit/loss, tenant, CSP, and user

I. INTRODUCTION

Cloud computing is grown as a well-recognized and most significant paradigm that delivers scalability, reliability, and effectiveness over meta-data storage at an affordable value. Generally, the cloud provides services to users and enterprises [1]. the standard cloud service providers are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and software system as a Service (SaaS) initializing the pay-as-you-go model to the final users [2] [3]. In method of supporting many services, the cloud equips data centres related with several computing nodes. However, generating huge centres and computing nodes within the system might cause most energy cost [4]. The data centre generation must consider energy value reduction wherever 50% of the budget is occupied for coiled the physical servers. To boost the CSP profit, the energy cost must be reduced to an extent. In recent times the data process in cloud servers achieves high measurability and therefore the ability to beat the availability of resources in want of serious stipulation. Within the previous method, the fog procedure resources combining the resources beside cloud services are progressed. The method thereby rising them as correct resolutions execution mitigating process. In cloud resource allocation and ensemble, applications are processed with the double-key operation that executes cloud applications during the fog process system. Inflexible fog procedure process, the operation runs over containers platform that permits real-time applications for resources of elastic resource allocations [5].

The proposed system is as follows:

1) First Step: initially the relationship within the CSP, Tenant, and the users are analyzed. Then, a deep learning technique is introduced to monitor the selection and prefers allocation accordingly.
2) Then, the system regulates a profit/loss calculator predicting the financial status and prefers allocation accordingly. By using this system, the selection is made easy and cost-effective.
3) Further, the system provides a trust service model for security purpose towards the allocation. The system monitors data transfer rate and some security monitoring, reliability check, recommendation, and anonymous maintenance are initialized.
4) Then, to stop leach attack a trust service mechanism is determined for effective security purpose.

II. LITERATURE SURVEY

A static load balancing within a distributed system is stated by S. Penmatsa et al., [8]. Further, the game theory focus in initializing cooperative and non-cooperative approaches in many areas determined as scheduling, selection process and communications purpose. Mei et al. deliberated an energy-aware scheduling model for tasks on dvs [9]. Y. Chen et al., proposed a QShield technique for security on outsourced Cloud Data Queries by using a Multi-User AC Based on SGX [10]. Meng et al., describes that the auto-scaling used for resource utilization provides performance degradation and is a simple solution. Hence the author addressed CRUPA (collusion-resistant user revocable public auditing of sharing data in Cloud) a utilization prediction model that provocations high accuracy over resource utilization.

©IJRASET: All Rights are Reserved

III. METHOD IMPLEMENTATION

Resource management authorizes the provider to customize profits and initialize the resources occupying to an extent. The aim of the scheduler is to make decisions on resource-providing considering the cloud status.

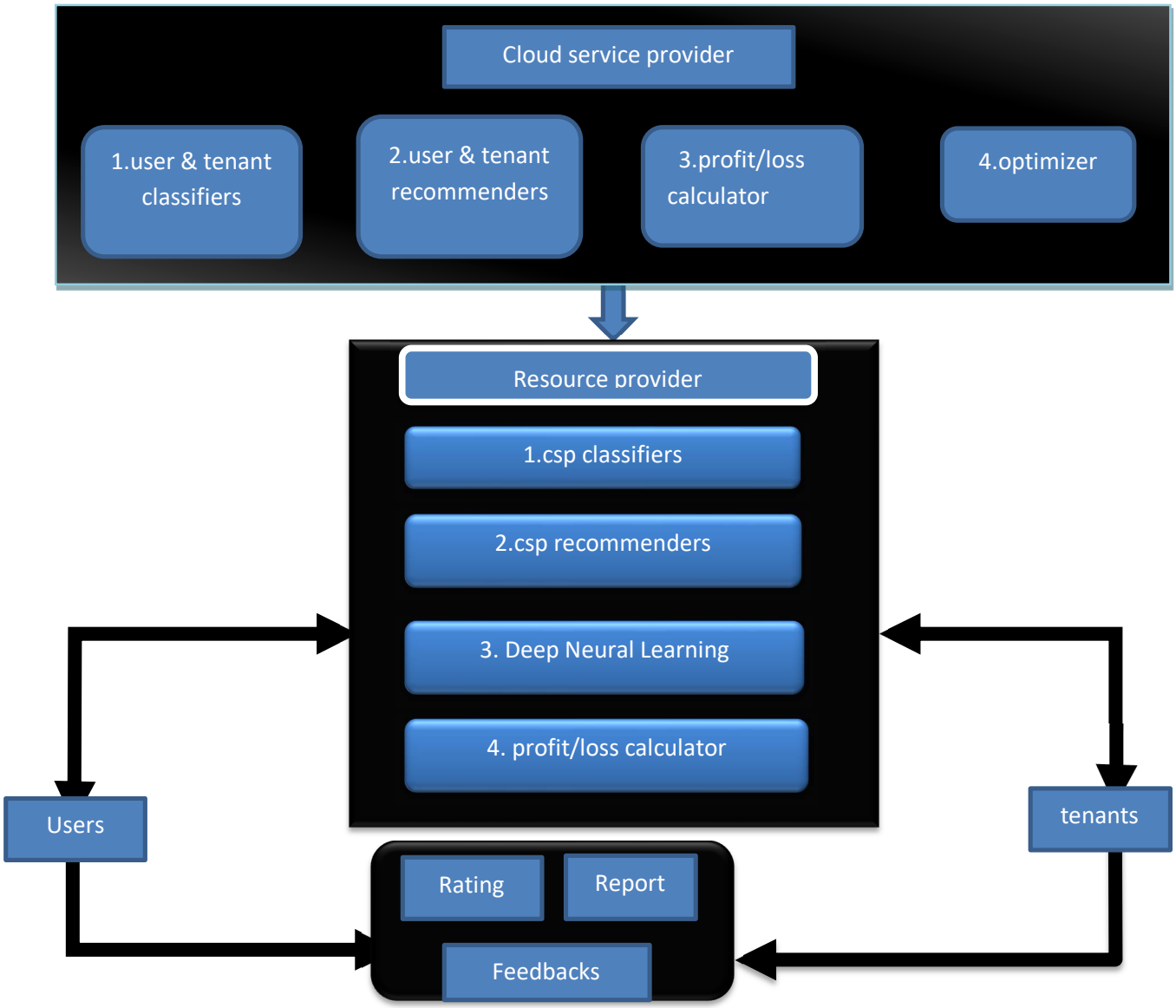


Figure 2. Cloud Deep Learning Model

A. Resource Allocation

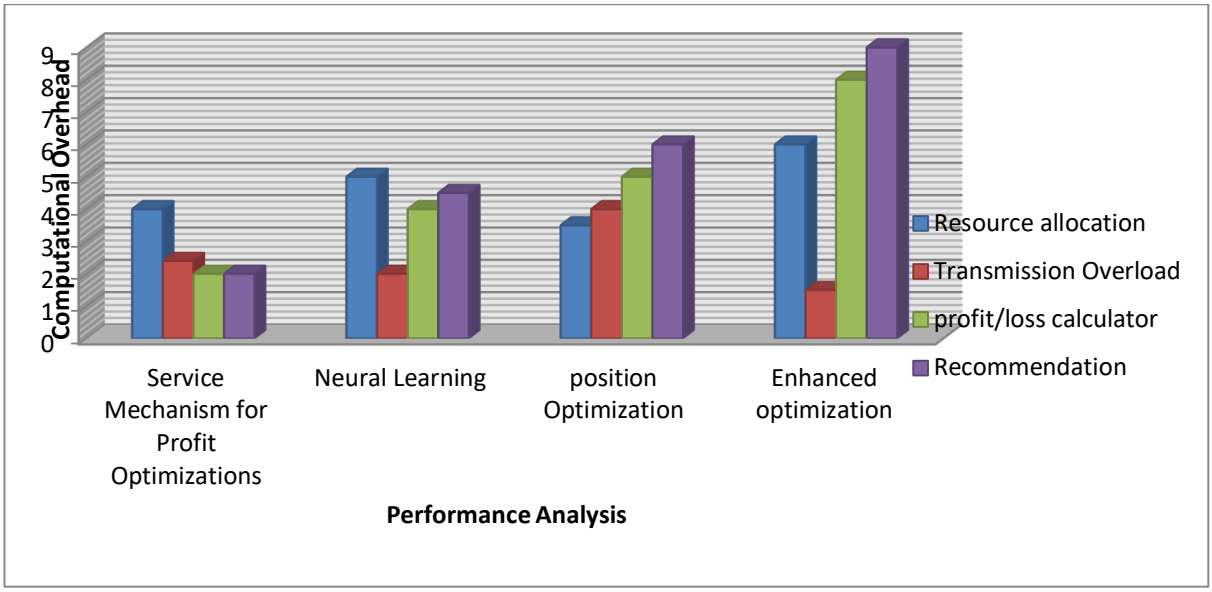
The selection process involves proper resource scheduling and selection. The actual utilization of resources leads to an efficient allocation of space in a cloud. The containers from cloud service providers are ranked from high to low. The ranking system performed where the container is ranked from high to low basis by estimating the rating of the user. The data when enters the cloud stream processing the selection process is implemented and done. From the fig 1. The system performs a deep learning, if a query related to resources and data management occurs the first work of the CSP is to validate whether it is from the tenant side or the user side. A classification method is followed to find out the differentiation between the tenant and the user. When a new availability of storage is freed up then automatically the resource is sent for a proper validation process. After several validations that particular container is recommended to the tenant and the tenant recommends the container to the user for data storage. At this stage, any profit/loss that occurs during allocation or transaction is well-monitored and controlled to an extent. In this model all the data arrival rates and disperse data rates are monitored according to the allocation of storage space a reasonable cost is structured to the tenant.

©IJRASET: All Rights are Reserved

The tenant must also obey the pricing according to the structure and the process is made more cost-effective. The main theme of the proposed model is the deep learning which analyzes and validates all the needs of resource allocation.

IV. RESULT ANALYSIS

In result analysis, a comparison of all the existing algorithms with the proposed model is done. A comparison of existing algorithms profit optimization, neural learning, Position Optimization with the proposed model 'Cloud Recommendation Model' is made.



Graph 1 : Existing Vs Proposed

V. CONCLUSION

The paper confronts a new cloud model brought by resource technology, which can help the cloud environment from the overload of data. The proposed system implements a proper resource for data allocation. The proposed deep neural Learning approach helps in choosing the best container from the service provider by checking the data reliability, accuracy, availability, security, and cost-efficiency. The system cordially addresses that security is main process. Hence, the resource suggested is monitored continuously and all the profit/loss is checked simultaneously to enhance the performance.

Further, in the proposed system the security is more concentrated and the technique can be implemented to enhance the security in real-time application.

REFERENCES

[1] Prasad and S. Rao, "A mechanism design approach to resource procurement in cloud computing," Computers, IEEE Transactions on, vol. 63, no. 1, pp. 17–30, Jan 2014.

[2] R. Pal and P. Hui, "Economic models for cloud service markets: Pricing and capacity planning," Theoretical Computer Science, vol. 496, no. 0, pp. 113 – 124, 2013.

[3] P. D. Kaur and I. Chana, "A resource elasticity framework for qos-aware execution of cloud applications," Future Generation Computer Systems, vol. 37, no. 0, pp. 14 – 25, 2014.

[4] Z. Li, J. Ge, H. Hu, W. Song, H. Hu, and B. Luo, "Cost and energy aware scheduling algorithm for scientific workflows with deadline constraint in clouds," IEEE Transactions on Services Computing, 2015, doi: 10.1109/TSC.2015.2466545.

[5] R. Zhu, S. Li, P. Wang, M. Xu and S. Yu, "Energy-efficient Deep Reinforced Traffic Grooming in Elastic Optical Networks for Cloud-Fog Computing," in IEEE Internet of Things Journal, doi: 10.1109/JIOT.2021.3063471.

[6] X. Wang, D. Kihara, J. Luo and G. -J. Qi, "EnAET: A Self-Trained Framework for Semi-Supervised and Supervised Learning With Ensemble Transformations," in IEEE Transactions on Image Processing, vol. 30, pp. 1639-1647, 2021, doi: 10.1109/TIP.2020.3044220.

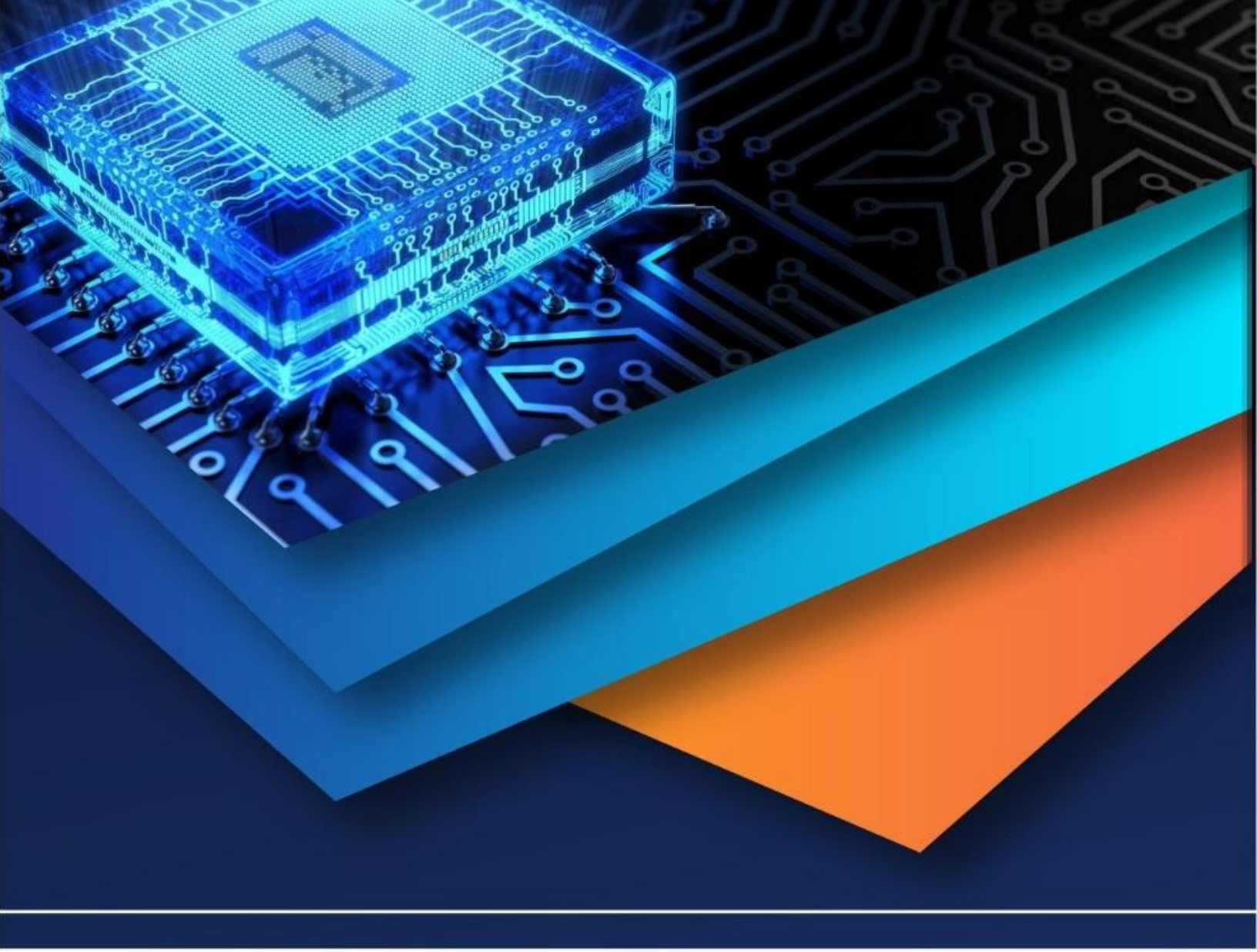
[7] S. Liu, S. Ren, G. Quan, M. Zhao, and S. Ren, "Profit aware load balancing for distributed cloud data centers," in Parallel Distributed Processing (IPDPS), 2013 IEEE 27th International Symposium on, May 2013, pp. 611–622.

[8] S. Penmatsa and A. T. Chronopoulos, "Game-theoretic static load balancing for distributed systems," Journal of Parallel and Distributed Computing, vol. 71, no. 4, pp. 537 – 555, 2011.

[9] J. Mei, K. Li, J. Hu, S. Yin, and E. H.-M. Sha, "Energy-aware preemptive scheduling algorithm for sporadic tasks on {DVS} platform," Microprocessors and Microsystems, vol. 37, no. 1, pp. 99 – 112, 2013.

[10] Y. Chen, Q. Zheng, Z. Yan and D. Liu, "QShield: Protecting Outsourced Cloud Data Queries With Multi-User Access Control Based on SGX," in IEEE Transactions on Parallel and Distributed Systems, vol. 32, no. 2, pp. 485-499, 1 Feb. 2021, doi: 10.1109/TPDS.2020.3024880.

©IJRASET: All Rights are Reserved



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)