Final Project Proposal - Group 14

Project Title:

Using Blockchain and Machine Learning to significantly improve the security of Cloud-based systems.

Group Members:

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Objective:

To identify the data security threats occurring in different Cloud Computing services over Deployment Models and provide solutions using Machine Learning and Blockchain approaches.

Motivation:

Organizations are actively looking towards the use of Cloud systems rather than on-premises systems due to factors such as affordability, scalability, etc. Due to this rise in demand, there has been increasing concern for data security, as the world is witnessing a rise in data breach incidents. Hence, by utilizing revolutionary technologies such as Blockchain and Machine Learning, security can be improved to prevent data breaches.

Scope of Study:

- Ensure data integrity by improving security in the cloud services such as SaaS, PaaS, IaaS using machine learning and Blockchain approaches from cyber-attacks like Malware, Adware, etc.
- The proposed model will monitor the activities of the cloud using Blockchain and will assist with the identification of suspicious patterns, and logins proactively with the help of Machine Learning approaches.

Expected Major Results:

- Identifying the threats to the data integrity in cloud computing.
- Explore the technologies related to the integration of Blockchain and Machine Learning.
- Determining feasible machine learning models for detection of the threats.
- Determine the use of Blockchain to mitigate the threats.
- Determining the integration of Blockchain and Machine Learning models to mitigate the threats.
- Determining measures for preventing the threats for data security in cloud computing.

Responsibilities:

Member Name	Responsibilities
Dheeraj Neela	● Interacting with Team Members and dividing the tasks based on their personal interests. ● Setting up the Weekly goals to achieve safe delivery of the Project. ● Setting up Weekly meetings to get the update on the status of the Weekly goals. ● Contributing and reviewing the Weekly reports for timely delivery without any errors. ● Review of journal publications and conference papers on Data integrity and security issues in cloud computing.
Sai Greeshma Gandham	● Weekly Report Submissions ● Collaborating with the group to schedule meetings as needed. Handle the leader's activities in his absence, if necessary. ● Compiling cloud computing applications and security challenges and solutions. ● Literature review on dealing with issues and challenges on data security in cloud computing. ● Literature review on the new threats in cloud computing.

Akhil Kumar Gudipoodi	● Explore publications and conferences on enhancing data security in cloud environments through predictive modeling. ● Discover the latest approaches used to predict security threats proactively through supervised, unsupervised, or semi-supervised machine learning techniques. ● Integrate and summarize the best possible techniques to come up with a novel solution for the betterment of data security.
Disha Prakash Bhukte	● Study the research papers related to data integrity in cloud computing. ● Investigate the latest Blockchain and machine learning techniques used for handling the threats to data integrity. ● Integrate the finalized machine learning and Blockchain techniques to improve security.
Meghana Amirineni	● Review of journal publications and conference papers on threats and vulnerabilities in cloud computing. ● Studying cloud computing system architecture to understand clearly about the possible security threats. ● Review and analyze existing solutions to mitigate various threats and vulnerabilities in Cloud computing. ● Identifying alternate approaches to improve cloud security.
Aditi Shashank Joshi	● Study the research papers related to Blockchain and machine learning in cloud computing. ● Study the latest Blockchain and machine learning techniques for threat handling ● Gather information to finalize the machine learning and Blockchain techniques to improve security and prevent attacks.

Sujana Duvvuri Venkateswarlu	● Study the basics of Blockchain techniques used in cloud environments. ● Analysis of the Blockchain model best suitable for the security of data. ● Gather information from relevant research papers and conduct a thorough analysis of Blockchain technology.
Everyone	● Actively involved and contributed to the Weekly reports. ● Contribution to the final report of the project

References:

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