Patent Search

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Abstract:

The proposed invention presents a pioneering Privacy-Preserving Federated Learning Framework tailored for Distributed Big Data Processing within Cloud Environme framework reimagines collaborative data analysis by allowing organizations to collectively train machine learning models without divulging sensitive raw data. It seam integrates with cloud computing infrastructure, harnessing its scalability and computational prowess, all while upholding individual data privacy and adhering to strin protection regulations. With a decentralized model training approach, each entity retains data control, sharing only lightweight model updates instead of raw data, th data transfer overhead and enhancing security. The system's adaptability to diverse cloud environments and robust security measures, including encryption and acce make it a potential game-changer across industries, fostering responsible and efficient data-driven decision-making while ensuring compliance with global data priva regulations.

Complete Specification

Description:The proposed system falls under the field of innovation in Privacy-Preserving Federated Learning Frameworks, specifically designed for Distributed Big I Processing in Cloud Environments. This emerging field at the intersection of machine learning, data privacy, and distributed computing addresses the growing need collaborative data analysis while preserving individual privacy and security.

In this framework, advanced techniques such as federated learning, homomorphic encryption, and differential privacy are harnessed to enable multiple organizatio individuals to collaboratively train machine learning models without sharing sensitive data. The system aims to revolutionize the way organizations process and ana massive datasets in the cloud by decentralizing the computation, reducing data transfer, and ensuring data privacy compliance with regulations like GDPR and HIPA By leveraging this cutting-edge technology, the proposed system not only unlocks the potential for more accurate machine learning models but also enables secure privacy-centric collaborations, opening up new opportunities for industries ranging from healthcare to finance to benefit from the insights hidden within their distri big data resources. This innovation represents a critical step towards balancing data-driven advancements with individual privacy protection in an increasingly interconnected world.

Background of the proposed invention:

The proposed invention, a Privacy-Preserving Federated Learning Framework for Distributed Big Data Processing in Cloud Environments, emerges against the backd an evolving technological landscape where data has become the lifeblood of modern organizations and society at large. In recent years, the explosion of data gener and the advent of cloud computing have revolutionized the way we collect, store, and analyze information. However, this transformation has also brought to the for critical challenges related to data privacy, security, and collaborative data analysis.

View Application Status