The Applications of Federated Learning Algorithm in the Federated Cloud Environment: A Systematic Review

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Abstract:
Federated learning (FL) refers to a system in which a central aggregator coordinates the efforts of several clients to solve the issues of machine learning. This setting allows the training data to be dispersed to protect the privacy of each device. This paper provides an overview of federated learning systems and how it can be applied in the federated cloud environment its frameworks, architectures, and applications, we were able to identify from various literature the Federated Learning technology was most used in the Federated Cloud/Multi-Cloud Environment, we also identified the use cases, additionally, we were able to identify the future directions Federated Learning could lean towards.

I. Introduction

Cloud computing is the delivery of computer services over the internet (the cloud), including servers, storage, database networks, software, analytics, and information. The ability for users to access and utilize resources on demand is one of the most remarkable features of cloud computing. [1] Cloud computing is available in three basic models: IaaS (Infrastructure as a Service), PaaS (Platform as a Service), and SaaS (Software as a Service). [2]

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