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**Proof of Reputation (PoR): A New Blockchain Consensus Scheme to Support Secure Multi-Party Computation and Machine Learning**

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**ABSTRACT**

This disclosure describes a consensus algorithm proof of reputation (PoR) that can be used for block chain which coordinates the federation learning. The present disclosure first describes the design layers of block chain nodes and the relationship among them. Then it describes the node role evolution workflow and how the consensus layer is activated to contribute to chain block making. Finally, it describes the details of consensus protocol, incentive mechanism and how it integrates with federation learning to get the reputation scores.