

FLoBC: A Decentralized Blockchain-Based Federated Learning Framework

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Abstract—The rapid expansion of data worldwide invites the need for more distributed solutions in order to apply machine learning on a much wider scale. The resultant distributed learning systems can have various degrees of centralization. In this work, we demonstrate our solution FLoBC for building a generic decentralized federated learning system using the blockchain technology, accommodating any machine learning model that is compatible with gradient descent optimization

machine learning algorithms, yet it seems the rapidly growing demand for machine learning applications has put us in a situation that yet again undermines the capabilities of individual machines. Here, an intuitive question comes to mind: why not just have multiple machines collaborate on training the model at hand? That is, in fact, the idea that Google realized in their conception of Federated Learning (FL) [14].