
**A New Multi-Party Computation With Secret Sharing (MPC-SS) Scheme for Vertical
Federated Logistic Regression Machine Learning**

(U.S. provisional patent number 63,146,589, Feb.6, 2021.)

ABSTRACT

This invention investigates a novel privacy problem in Federated Learning algorithm, specifically it focuses on the collaboration of multiple data owners training a logistic regression. This invention discloses a Multi-Party Computation secret sharing scheme to protect the data owners' data during the training process. It successfully removed the dependence of the trust server which is required by the homomorphic encryption (HE) scheme to train the logistic regression under federate learning setting.