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(57) Abstract :
Learning accuracy is improved by practicing multiple partiesâ€™ collaboration that conducts back propagation jointly with neural network that combines the data sets from both. None of the party discloses the private data during this process to other parties. This type of collaborative learning is supported by the existing schemes that are limited in the partition of data or by considering only two parties. Collaborative learning conduction is done by the partitioned data set allowing two or more parties lacking the solution. This invention solves the problem by using the cloud computing power. Private data of each party is encrypted locally and uploaded in the cloud with its cipher texts. Operations involved in the learning algorithm are executed by the cloud over the cipher texts without the knowledge of original data of a private party. Expensive operations are offloaded securely to the cloud for minimizing the communication and computation cost. Flexible operations are supported over cipher texts by the encryption algorithm.

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