

ABSTRACT

Machine learning is one of the disciplines that is part of the development of artificial intelligence. Currently, machine learning has been used in all fields related to applications, and hardware that aim to help users to perform tasks with minimal human intervention.

The data used by machine learning to process commands to be given varies. Data is an important key for machine learning to be processed so that the machine can give orders according to the circumstances and conditions being faced by the machine. The data can be in the form of public data or personal data that is prone to be disseminated. So, the protection of personal data belonging to application users and hardware is very important in machine learning. Scientists are currently finding a solution to this problem; the solution is federated learning.

This research has the purpose to get the results of evaluate Federated Learning. The results of the evaluation on Federated Learning showed that the average accuracy value of 20 times the model training at the data center was 70% and the average loss value was 1.04. This study also compares Federated Learning and traditional machine learning with the results showing that Federated Learning's accuracy is lower than regular machine learning. As well as higher loss and error values in Federated Learning compared to traditional machine learning. An evaluation of the accuracy of Federated Learning is also carried out by changing the number of clients and the number of model training on clients and showing that the number of model training on client devices affects the quality of model accuracy in training in the Federated Learning datacenter.

Keyword: Machine learning, Artificial intelligence, Federated learning, personal data, Performance, Image classification. Evaluation.