FL-IJCAI2020 Workshop

Decentralized fair machine learning

1. Trusted server acting as the executor
2. Reward
   1. Different local models with different accuracies
   2. Shared access to the global model, with monetized compensation to make up for fairness
3. Fairness measure:
   1. Correlation coefficient between the individual contribution (characterized by sharing level and quality of data) and the individual test set accuracy after collaboration
   2. Define a different characteristic function to evaluate Shapley value
      1. angle between the coalitional gradient update and the historical gradient update, smaller the angle, higher the contribution
      2. the trusted server maintains a validation set on the model applied with a coalitional gradient update -> the higher the validation accuracy, higher the contribution
   3. RONI (rejection on negative impact)