Tiansheng Huang

PhD student at Georgia Institute of Technology
thuang374@gatech.edu

EDUCATION

Georgia Institute of Technology, Atlanta, USA   Aug 2022 – Present
- First year PhD student, School of computer science
- Program Advisor: Prof. Ling Liu.
- Current progress: one paper on backdoor defense of federated learning is submitted.

South China University of Technology, Guangzhou, China   Sept 2019 – June 2022
- M.S, School of computer science
- Program Advisor: Prof. Weiwei Lin
- Thesis: Application of Multi-arm Bandit Algorithms in Client Selection of Federated Learning

South China University of Technology, Guangzhou, China   Sept 2015 – June 2019
- B.S, School of computer science
- GPA: 3.75 (rank top 10%)

Research Interest

Current interest
- My current research interest lies in the optimization, privacy/security aspect of federated learning.

Previous studied
- Multi-arm bandit
- Online learning.
- Resource scheduling on cloud/edge computing

EXPERIENCE

JD explore academy, Beijing, China   March 2022 - June 2022
Research Intern
- Develop Personalized FL algorithms with factorization and sparse compression.
- Program Advisor: Dr. Li Shen

JD explore academy, Beijing, China   June, 2021 - Sept 2021
Research Intern
- Develop high efficiency sparse training algorithms for personalized FL.
- Program Advisor: Dr. Li Shen

Honor and Awards

Two years of **National Scholarship** (Top government scholarship in China)   2020, 2021
First-Class School Scholarship   2019

Publications

Journal

[1] **T. Huang**, L. Shen, Y. Sun, W. Lin, and D. Tao, "Fusion of Global and Local Knowledge for Personalized Federated Learning," 2022, Transactions on Machine Learning Research (TMLR).

[2] **T. Huang**, W. Lin, L. Shen, K. Li and A. Y. Zomaya, "Stochastic Client Selection for Federated Learning with Volatile Clients," 2022, IEEE Internet of Things Journals (IoT-J).

[3] **T. Huang**, W. Lin, X. Hong , X. Wang, Q. Wu, R. Li, CH. Hsu, AY. Zomaya, "Adaptive Processor Frequency Adjustment for Mobile Edge Computing with Intermittent Energy Supply", 2021, IEEE Internet of Things Journals (IoT-J).

[4] **T. Huang**, W. Lin, W. Wu, L. He, K. Li and AY. Zomaya, "An Efficiency-boosting Client Selection Scheme for Federated Learning with Fairness Guarantee," 2020, IEEE Transactions on Parallel and Distributed Systems (TPDS).
[5] **T. Huang**, W. Lin, C. Xiong, R. Pan and J. Huang, "An Ant Colony Optimization Based Multi-objective Service Replicas Placement Strategy for Fog Computing," 2020, IEEE Transactions on Cybernetics (TCYB).

Peer-review Conference
[6] Y. Sun, L. Shen, **T. Huang**, and D. Tao, "FedSpeed: Larger Local Interval, Less Communication Round, and Higher Generalization Accuracy ," Accepted, ICLR2023