Tiansheng Huang

Basic Information

- **Email:** tianshenghuangscut@gmail.com
- **Homepage:** https://huangtiansheng.github.io/
- **Github:** https://github.com/huangtiansheng

Education

Georgia Institute of Technology
PhD student in Computer Science, with Prof. Ling Liu   *August, 2022 -present*

South China University of Technology
Master in Computer Science, with Prof. Weiwei Lin   *September, 2019- June, 2022*
Thesis Title: Application of Multi-arm Bandit Algorithms in Client Selection Problem of Federated Learning

South China University of Technology
Bachelor in Computer Science, with Prof. Weiwei Lin   *September, 2015 - June, 2019*
GPA – 3.7^{+}, rank top 10%

Research Interest

- **Federated Learning / Distributed Machine Learning**
- **Parallel and Distributed Computing**
- **Application of optimization algorithms**
- **Model compression/Sparse Training**

Industrial Experience

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

Research Intern at JD explore academy, Beijing, China, with Dr. Li Shen
Develop high efficiency sparse training algorithms for personalized FL.   *June, 2022 - September, 2022*

Publications

Journal

- **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) (Special Section on Parallel and Distributed Computing Techniques for AI, ML, and DL) [arXiv] [Xplore]
- **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", 2022, *IEEE Internet of Things Journals* [arXiv] [Code] [Xplore]
- **T. Huang**, W. Lin, L. Shen, K. Li and A. Y. Zomaya, "Stochastic Client Selection for Federated Learning with Volatile Clients," 2021, *IEEE Internet of Things Journals* (IoT-J). [arXiv]
- **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*. [Xplore]

Preprint

- **T. Huang**, S. Liu, L. Shen, F. He, W. Lin, D. Tao, "Achieving Personalized Federated Learning with Sparse Local Models," under review by *IEEE Transactions on Pattern Analysis and Machine Intelligence*. [arXiv]

Honors & Awards

- **National Scholarship (Best scholarship for graduate student in China), 2021**
- **National Scholarship, 2020**
- **The First-Class School Scholarship, 2019**

Academy Experience

Teaching Assistant at Georgia Institute of Technology, Atlanta, USA
Responsibility: Grader, help session.   *August, 2022 -present*

Research Assistant at South China University of China, Guangzhou, China
Topic: federated learning, application of optimization algorithms, edge computing.   *September, 2019 - June, 2022*