Yu(Eugene) Zhang

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EDUCATION

University of Texas at San Antonio, San Antonio, USA September 2019 – Present
Ph.D., Electrical and Computer Engineering
Anticipated date of graduation December 2024
Dissertation proposal defense date May 2023
University of Texas at Dallas, Dallas, USA September 2016 - December 2017
M.S., Information Technology and Management
Wuhan University of Technology, Wuhan, China September 2009 – June 2013
B.S., Major in Navigation Technology
B.S., Minor in Logistics Management

RESEARCH INTERESTS

Internet of Things, Edge-Cloud Computing,
Wireless Networking, Quantum Computing and Communication, Artificial Intelligence

WORKING EXPERIENCE

University of Texas at San Antonio, San Antonio, USA September 2020 – June 2024
Teaching Assistant

- IS 3303 Operating System Security
- IS 4483 Digital Forensic Analysis I
- IS 4523 Digital Forensic Analysis II

University of Texas at San Antonio, San Antonio, USA September 2019 – Present
Research Assistant

- Developed a semi-supervised federated learning framework that leverages a limited set of labeled data on the ground server and a substantial volume of unlabeled data from satellites, enabling efficient training of a building assessment model without the necessity for manual labeling.
- Developed a hybrid quantum-classical generalized Benders' decomposition algorithm to maximize network throughput by simultaneously optimizing content delivery policies, cache placement, and transmission power allocation within integrated satellite-terrestrial networks.
- Utilized successive convex approximation to optimize energy consumption across multiple UAVs by simultaneously optimizing task offloading and splitting decisions, as well as communication and computing resource allocation and UAV deployment.

MLSDealFinder, Dallas, USA August 2017 – June 2019
Business Analyst Internship

- Executed string manipulation, then aggregated large dataset for data visualization by using Spark.
- Analyzed and predicted the next year's market trend by building a time-series mode using python and R.
- Monitored company`s website performance using Google Analytics, and optimized by designing A/B tests.

SELECTED PUBLICATIONS

[1] **Yu Zhang**, Yanmin Gong, Lei Fan, Yu Wang, Zhu Han, and Yuanxiong Guo. "Quantum-Assisted Joint Virtual Network Function Deployment and Maximum Flow Routing for Space Information Networks", in: *IEEE Transactions on Mobile Computing (TMC), accepted*, August 2024.

[2] **Yu Zhang**, Yanmin Gong, and Yuanxiong Guo. "Energy-Efficient Resource Management for Multi-UAV-Enabled Mobile Edge Computing", in: *IEEE Transactions on Vehicular Technology (TVT),* vol. 73, no. 8, pp. 12026-12037, March 2024.

[3] **Yu Zhang**, Yanmin Gong, Lei Fan, Yu Wang, Zhu Han, and Yuanxiong Guo. "Quantum-Assisted Joint Caching and Power Allocation for Integrated Satellite-Terrestrial Networks", in: *IEEE Transactions on Network Science and Engineering (TNSE),* July 2024, DOI: 10.1109/TNSE.2024.3435444.

[4] **Yu Zhang**, Yanmin Gong, and Yuanxiong Guo. "Semi-Supervised Federated Learning for Assessing Building Damage from Satellite Imagery", in: *Proc. of IEEE International Conference on Communications (ICC)*, Denver, CO, USA, August 2024, DOI: 10.1109/ICC51166.2024.10622484.

[5] **Yu Zhang**, Yanmin Gong, Lei Fan, Yu Wang, Zhu Han, and Yuanxiong Guo. "Quantum-Assisted Online Task Offloading and Resource Allocation in MEC-Enabled Satellite-Aerial-Terrestrial Integrated Networks", in: *IEEE Transactions on Mobile Computing (TMC), under review*, July 2024.

[6] **Yu Zhang**, Yanmin Gong, Lei Fan, Yu Wang, Zhu Han, and Yuanxiong Guo. "Efficient Entanglement Routing for Satellite-Aerial-Terrestrial Quantum Networks", in: *IEEE Network, under review*, September 2024.

[7] Zhidong Gao, **Yu Zhang**, and Yuanxiong Guo. "Heterogeneity-Aware Resource Allocation and Topology Design for Hierarchical Federated Edge Learning", in: *IEEE Internet of Things Journal (IoT), under review*, August 2024.

[8] Zhidong Gao, **Yu Zhang**, Zhenxiao Zhang, Yanmin Gong, and Yuanxiong Guo. "Federated Proxy-Tuning Multi-Billion Parameter Language Models on Resource-Constrained Devices", in: *Association for the Advancement of Artificial Intelligence (AAAI), under review*, August 2024.

[9] Zhidong Gao, Zhenxiao Zhang, **Yu Zhang**, Tongnian Wang, Yanmin Gong, and Yuanxiong Guo. "Online Client Scheduling and Resource Allocation for Efficient Federated Edge Learning", in: *IEEE Transactions on Wireless Communications (TWC), under review*, July 2024.

SKILLS

Programming Language:	R, SQL, Python, Scala
Tools:	SAS, Tableau, Pytorch, Matlab, Google Analytics, Dwave Quantum Solver
Database:	Microsoft SQL Server, MongoDB, Hive
Machine Learning:	Federated Learning, Reinforcement Learning, Large Language Model, Diffusion Model

HONORS & AWARDS

Graduate School Professional Development Award, UTSA, USA	July 2024
COVID-19 Transdisciplinary Team Grand Challenge Participation Award, UTSA, USA	September 2020
IEEE S&P Student Registration Award, UTSA, USA	May 2020
MIS Data Visualization Competition Finalist, UT Dallas, USA	November 2017
INFORMS Data Analytics Competition Finalist, UT Dallas, USA	April 2017

SERVICES

Reviewer

- IEEE Transactions on Cognitive Communications and Networking (TCCN), 2024
- IEEE International Conference on Pervasive Computing and Communications (PerCom), 2024
- IEEE Transactions on Green Communications and Networking (TGCN), 2024
- ACM Computing Surveys, 2024
- Energy Systems, 2024
- IEEE Wireless Communications Magazine, 2023
- IEEE Global Communications Conference (Globcom), 2020, 2022
- IEEE Conference on Communications and Network Security (CNS), 2021
- IEEE Transactions on Vehicular Technology (TVT), 2020

Outreach

- Poster presentation at IEEE ICC, Denver, USA, 2024
- Poster presentation at New In ML workshop of NeurIPS, New Orleans, USA, 2023
- Volunteer at MATRIX AI Seminar, San Antonio, USA, 2021
- Volunteer at Big Idea Competition, Dallas, USA, 2017
- Volunteer at National Navigation Summer Camp, Wuhan, China, 2012

PROFESSIONAL AFFILIATION

IEEE Student Member (2019~present)
IEEE Communications Society Member (2019~present)