

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

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, Mobile Edge 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.

MLSDDealFinder, 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 model 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 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.
- [2] **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.
- [3] **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.

- [4] **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.
- [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
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> 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)