

## Yu (Eugene) Zhang

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## EDUCATION

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**University of Texas at San Antonio, San Antonio, USA**

September 2019 – Present

*Ph.D., Computer Engineering*

*Anticipated date of graduation*

December 2024

**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

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Internet of Things, Edge-Cloud Computing,

Wireless Networking, Quantum Computing and Communication, Artificial Intelligence

## WORKING EXPERIENCE

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**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

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- [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)*, early access, September 2024, DOI: 10.1109/TMC.2024.3466857.
- [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)*, early access, 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

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

## HONORS & AWARDS

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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

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### Reviewer

- IEEE Transactions on Mobile Computing (TMC), 2024
- IEEE Wireless Communications and Networking Conference (WCNC), 2024
- IEEE Transactions on Communications (TCOM), 2024
- 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

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