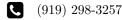
Xuanhao Luo



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EDUCATION AND EMPLOYMENT

• North Carolina State University

Ph.D. student in Computer Science, Research Assistant Advised by Prof. Yuchen Liu

• Syracuse University

Research Intern

Advised by Prof. Reza Zafarani and Dr. Xinyi Zhou

• University of Electronic Science and Technology of China Research Intern
Advised by Prof. Du Xu

• Kunming University of Science and Technology B.E. in Computer Science & Technology, Research Assistant Advised by Prof. Yong Feng

 $\begin{array}{c} \textbf{Raleigh, NC} \\ Aug. \ 2023 \ \text{-} Now \\ \end{array}$ Generative AI, Intelligent Networks

Syracuse, NY

Apr. 2022 - Sept. 2022 Data mining, Natural Language Processing

Chengdu, China

Mar.~2021 - Aug.~2021 DRL for Resource Management

Kunming, China Sept. 2019 - July 2023 Internet of Vehicles, IoT

SKILLS

- Programming: Python(5 years) | Java | C/C++ | MATLAB | SQL | Bash | Assembly | HTML.
- Tools: Pytorch/TensorFlow(4 years)/Keras | Huggingface | Git | ns-3 | Wireshark | Wireless Insite | Hadoop.
- Others: STM32 & c51 | Embedded System Development | Raspberry Pi | Unigraphics NX | AutoCAD.

PROJECTS

Generative AI 2023 - Now

During Ph.D

- Byte **Transformer** for wireless **packet compression** with accurate next byte prediction | Evaluated the performance and **efficiency** of different model sizes across various devices.
- Radio map generation in mmWave and 5G networks using conditional **DDPM** and **cGANs**.

Reinforcement Learning

2019 - Now

During Bachelor and Ph.D

- Actor-critic: TD3-based active queue management for the vSwitch in Multi-tenant Data Center (MTDC) | AC based scheduling for satellite networks.
- Multi-Armed Bandits: MAB for context-aware beam management.
- Double DQN: UAV schedule scheme for wireless rechargeable sensor networks (WRSN).

NLP (Hate Speech Detection)

Summer 2022

During summer intern in Syracuse University

- Provided benchmarks on public datasets using TextCNN, RNN (LSTM and GRU), and GCN.
- Multimodal hate speech detection using knowledge graph, NLP and image processing.

Embedded System and IoT

2019 - 2023

During Bachelor

- STM32: Embedded image recognition system based on CNN | Quadcopter flight control system.
- Raspberry Pi: Machine Vision for Object Detection | Laser SLAM-based mapping | Mechanical Arm Control | Smart Vehicle Path Planning and Obstacle Avoidance.

PUBLICATIONS

[1] Xuanhao Luo, Zhizhen Li, Zhiyuan Peng, Mingzhe Chen, Yuchen Liu. "Denoising Diffusion Probabilistic Model for Radio Map Estimation in Generative Wireless Networks", IEEE Transactions on Cognitive Communications and Networking (ICCN). Submitted. June. 2024.

- [2] Zhizhen Li, Xuanhao Luo, Yuchen Liu, Mingzhen Chen, Chenhan, Xu, Shiwen Mao. "Contextual Combinatorial Beam Management via Online Probing for Multiple Access mmWave Wireless Networks", IEEE Journal on Selected Areas in Communications (JSAC), Accepted with major revision, March. 2024.
- [3] Xuanhao Luo, Zhizhen Li, Zhiyuan Peng, Dongkuan Xu, Yuchen Liu. "RM-Gen: Conditional Diffusion Model-Based Radio Map Generation for Wireless Networks", 2024 IFIP Networking Conference (IFIP Networking). Apr. 2024.
- [4] Zhizhen Li, Xuanhao Luo, Mingzhen Chen, Chenhan, Xu, Yuchen Liu. "Context-Aware Beam Management via Online Probing in Combinatorial Multi-Armed Bandits", IEEE International Conference on Communications (ICC 2024), Accepted, Jan. 2024.
- [5] Huihui Ma, Xuanhao Luo, Du Xu. "Intelligent Queue Management of Open vSwitch in Multi-tenant Data Center", Future Generation Computer Systems, Impact factor: 7.307, Jul. 2023.
- [6] Xuanhao Luo, Yong Feng, Chengdong Wang. "A Clothoid Curve based Intersection Collision Warning Scheme in Internet of Vehicles", The Computer Journal, CCF: B, Jul. 2022.
- [7] Hui Li, Ruijin Zhou, Dongchong Shi, Xuanhao Luo, Xue Chen, Dan Liao. "A Lightweight Block Storage Security Scheme based on LT Coding for 6G Network", 2021 IEEE 12th International Symposium on Parallel Architectures, Algorithms and Programming (PAAP). Dec. 2021.
- [8] Cong Li, Jianlin Mao, Dayan Li, Zhao Ma, Xuanhao Luo. "Design of embedded image recognition system for lightweight convolutional neural network", Journal of Automation and Instrumentation (in Chinese). Jan. 2021.

PATENTS

- [1] "Computer monitor parameter adjustment method.", CN202111301980.5.
- [2] "A mobile wireless charging device.", CN202121232922.7.
- [3] "Handheld lighting terminal based on three axis acceleration sensors.", CN201820762072.3.

SERVICE

Conference Reviewer	
• TPC Member of IEEE Globecom Workshop.	Aug. 2024
• TPC Member of IEEE ICC Workshop.	Feb. 2024
Teaching Experience (NC State University)	
• Mentor, Summer Residential Camps: "Seeing through a Digital World". (Lectures on ns-3)	Aug. 2024.
• Teaching Assistant, CSC 226 - Discrete Mathematics for Computer Scientists.	2024 Spring.
• Teaching Assistant, CSC 246 - Concepts and Facilities of Operating Systems.	2024 Spring.
\bullet Teaching Assistant, CSC 226 - Discrete Mathematics for Computer Scientists.	2023 Fall.

AWARDS

NSF Travle Award	May. 2024
NC State graduate student Travle Award	Feb. 2024
Excellent Graduation Thesis	June. 2023
National Computer Design Competition (National Second-Class Award)	Aug. 2021
National Engineering Training Competition for College Students (Provincial Gold Award)	Apr. 2021
"Internet plus" Competition (Provincial Silver Award)	July. 2021
Service Outsourcing Innovation Competition (Regional Third-Class Award)	June. 2021
National College Students Electronic Design Competition (Provincial Third-Class Award)	Nov. 2021
Innovation and Entrepreneurship scholarship of the university	Sept. 2021
Second-class scholarship of the university	Sept. 2020