

Xumiao Zhang

525 Almanor Ave, Ste 400, Sunnyvale, CA 94085, USA
xumiao@umich.edu | <https://web.eecs.umich.edu/~xumiao/>

EDUCATION

University of Michigan

Aug 2018 – June 2024

Ph.D. candidate in Computer Science and Engineering

- Advisor: Prof. Z. Morley Mao
- Research interests: AI for networking, networked systems, mobile networking
- Thesis: Characterizing and Improving Next-Generation Network Infrastructures and Applications

University of Michigan

Aug 2018 – Apr 2022

M.S. in Computer Science and Engineering

University of Science and Technology of China

Aug 2014 – Jul 2018

B.E. in Electronic Information Engineering

- School of the Gifted Young, Talent Program in Computer and Information Science & Technology
- Thesis: Acoustic Side-channel Sensing Using Wireless Signals

SELECTED PUBLICATIONS (*: co-primary)

- **Xumiao Zhang**, S. Jin, Y. He, A. Hassan, Z. Mao, F. Qian, and Z. Zhang. “QUIC is not Quick Enough over Fast Internet”, *ACM WWW 2024*.
- Y. Xu*, Y. Chen*, **Xumiao Zhang***, X. Lin, P. Hu, Y. Ma, S. Lu, W. Du, Z. Mao, E. Zhai, D. Cai. “CloudEval-YAML: A Practical Benchmark for Cloud Configuration Generation”, *MLSys 2024*.
- B. Hu*, **Xumiao Zhang***, Q. Zhang, N. Varyani, Z. Mao, F. Qian, and Z. Zhang. “LEO Satellite vs. Cellular Networks: Exploring the Potential for Synergistic Integration”, *ACM CoNEXT 2023*.
- Q. Zhang*, **Xumiao Zhang***, R. Zhu*, F. Bai, M. Naserian, Z. Mao. “Robust Real-time Multi-vehicle Collaboration on Asynchronous Sensors”, *ACM MobiCom 2023*.
- **Xumiao Zhang**, A. Zhang, J. Sun, X. Zhu, Y. Guo, F. Qian, Z. Mao. “EMP: Edge-assisted Multi-vehicle Perception”, *ACM MobiCom 2021*.
- A. Narayanan*, **Xumiao Zhang***, R. Zhu, A. Hassan, S. Jin, X. Zhu, X. Zhang, D. Rybkin, Z. Yang, Z. Mao, F. Qian, and Z. Zhang. “A Variegated Look at 5G in the Wild: Performance, Power, and QoE Implications”, *ACM SIGCOMM 2021*.

EXPERIENCE

Alibaba Group, Research Intern

Jan 2024 – Apr 2024

Advisor: Dr. Pan Hu

Sunnyvale, CA

- Developed a hierarchical framework utilizing large language models for efficient network incident management.
- Designed prompts following SOPs to guide models in summarizing network logs and identifying error devices.
- Evaluated the proposed framework based on GPT and Qwen against a traditional incident detection method.
- Built a benchmark comprising 1011 hand-written problems for code generation in cloud-native applications.

University of Michigan, Graduate Student Research Assistant

Sep 2018 – Dec 2023

Advisor: Prof. Z. Morley Mao

Ann Arbor, MI

- Compared the Starlink satellite and cellular network performance and explored the potential of enabling multipath.
- Examined QUIC transport performance over high-speed networks against TCP and investigated root causes.
- Designed an edge-assisted vehicular sensor sharing system based on Voronoi diagrams for perception enhancement.
- Conducted a performance and power examination of 5G networks over different bands and deployment schemes.
- Co-developed a network-level collaboration system for mobile devices using distributed multipath transport.

Alibaba Group, Research Intern

May 2022 – Aug 2022

Advisor: Dr. Yunfei Ma, Dr. Pan Hu, Dr. Xuan Zeng

Sunnyvale, CA

- Proposed a congestion control selection and tuning framework to improve app QoE and reduce CDN traffic cost.
- Analyzed temporal/spatial network traffic distribution and user grouping strategies with massive real-world data.
- Examined different machine learning models for predicting CC performance from history network information.
- Modified XLINK, a multipath QUIC transport solution, and benchmarked its network performance with MPTCP.
- Collected real-world WiFi-6 traces using Saturatr and set up multipath Mahimahi simulation environment.

General Motors, Research and Development Intern

Jun 2020 – Aug 2020

Advisor: Dr. Hariharan Krishnan

Warren, MI

- Proposed a camera-based infrastructure cooperative perception system for enhanced situational awareness.
- Incorporated the YOLOv3 object detector and a centroid tracking algorithm to estimate vehicle motions.
- Converted the detection results from the sensor's perspective to a global view with a generic geo-representation.
- Built a proof-of-concept perception system and evaluated the positioning errors across various driving scenarios.

Ohio State University, Visiting Scholar

Jul 2017 – Aug 2017

Advisor: Prof. Chunyi Peng

Columbus, OH

- Co-developed a cellular network monitoring and analysis tool, [MobileInsight](#), focusing on the iOS version.
- Enabled manual and automatic logging functions on iOS for the tool to collect cellular baseband information.
- Cross-compiled required libraries and dependencies including Wireshark and Glib for iOS (arm-apple-darwin).

University of Science and Technology of China, Undergraduate Assistant

Nov 2016 – Apr 2018

Advisor: Prof. Xiangyang Li, Prof. Panlong Yang

Hefei, China

- Co-developed a smartwatch-based American Sign Language recognition system and collected sensor data of signs.
- Applied Kalman filter and Fast Fourier transform to process the sequential sensor data and generate spectrograms.
- Employed LSTM-RNN to learn the features of sign gestures and used a CTC loss function to handle segmentation.

TEACHING AND MENTORSHIP

Teaching

- Teaching Assistant (USTC), Fundamentals of Database Systems. Sep 2017 – Jan 2018

Mentorship

- Zheng Li (University of Michigan), LEO satellite network data analysis. Jan 2023 – Aug 2023
- Yi He (University of Michigan, now Duolingo), QUIC experiments and data analysis. Nov 2021 – Apr 2023
- Hanchi Zhang (University of Michigan, now Google), Autonomous vehicle perception. Jun 2020 – Aug 2020

HONORS AND AWARDS

- Student Travel Grant, IMC 2023, SIGCOMM 2023, MobiCom 2021, HotMobile 2019 2019 – 2023
- Outstanding Graduate, Provincial Department of Education of Anhui (top 3%) Apr 2018
- Outstanding Graduate, University of Science and Technology of China Mar 2018
- Outstanding Student Scholarship, USTC (top 10%) 2015 – 2017
- National Encouragement Scholarship, Ministry of Education of China (top 3%) Nov 2017
- Second Prize of Electronic Design Contest, Institute of Electronics, CAS Jun 2016
- Outstanding Student Leadership Award, USTC Oct 2015
- Social Responsibility Scholarship, USTC May 2015
- Outstanding Freshman Scholarship, USTC Sep 2014

SERVICES

- Program Committee: ACM S3 2023, ACM S3 2022
- Journal Reviewer: IEEE/ACM ToN, IEEE TMC, IEEE JSAC, IEEE VTM, IEEE TVT
- Conference Reviewer: ACM MM 2024, ACM WWW 2024, IEEE INFOCOM 2024, IEEE INFOCOM 2023, IEEE VNC 2023, IEEE VNC 2021
- Artifact Evaluation Committee: ACM SIGCOMM 2023, ACM CoNEXT 2023, ACM CoNEXT 2022, ACM SIGCOMM 2021
- Shadow Program Committee: ACM IMC 2019
- Volunteer: ACM MobiCom 2021, ACM TUR-C 2017

SKILLS

- Programming Languages: Python, Java, C/C++, MATLAB, SQL, VHDL, Assembly Language
- Tools and Frameworks: Linux, Android, Kubernetes, PyTorch, Git, L^AT_EX, MySQL, Origin

Last updated: June, 2024