Sizhe Wang

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RESEARCH INTERESTS

Experimental Wireless (5G / LEO Satellite) Networking, Software-Defined Networking, Mobile Computing, Extended Reality (VR/AR), Video Streaming

EDUCATION

Northeastern University, Boston, USA
Ph.D. in Computer Engineering, NUWiNS Lab   Jan 2024 – Present
Advisor: Dimitrios Koutsonikolas
Concentration: Wireless Networks and Systems
M.S. in Electrical & Computer Engineering   Sep 2022 - Dec 2023
Concentration: Computer Networks and Security

Huazhong University of Science and Technology, Wuhan, China
Bachelor of Software Engineering   Sep 2015 – Jun 2019
Concentration: Digital Media Technology

RESEARCH EXPERIENCE

NUWiNS Lab at Northeastern University, Boston, USA   Jan 2024 – Present
Graduate Research Assistant
- Conducted network measurements on the wheels on comparing LEO satellite (Starlink) with cellular networks in remote and non-continental U.S. regions (Hawaii, Alaska and Maine) using custom scripts on smartphones and dedicated measurement devices (XCAL Solo) to analyze coverage and performance of wireless technologies in the wild and explore multipath potential.
- Performed a pioneering study on Apple's stereoscopic videos (MV-HEVC codec) with Apple Vision Pro headsets, identifying uplink challenges over cellular networks and seeking opportunities in live stereoscopic video streaming using commodity smartphones and XR headsets.
- Analyzed network pattern and latency of multi-user AR games on smartphones over 5G networks, demonstrating that a design of asynchronous remote SLAM calls could significantly reduce end-to-end latency in real-time user interactions.

WurQ Inc, Boston, USA   May 2023 – Dec 2023
Mobile App Developer (Internship)
- Optimized connection management between wearable sensors and smartphones via Bluetooth Low-Energy (BLE) protocol for data collection, balancing data transmission frequency and power consumption.
- Engineered cross-platform integration of wearable sensor SDKs (iOS and Android) into a React Native mobile app, developing a custom bridge to seamlessly connect native functionalities with JavaScript runtime.

PUBLICATIONS

- Chen, G.*, **Wang, S.*,** Chakareski J., Koutsonikolas, D., Dasari, M. (2025). *Spatial Video Streaming on Apple Vision Pro XR Headset*. In Proceedings of the 26th International Workshop on Mobile Computing Systems and Applications (HOTMOBILE '25). https://doi.org/10.1145/3708468.3711878
- **Wang, S.,** Liu, M., Dasari, M., & Koutsonikolas, D. (2024). *A First Look at Apple's Stereoscopic Video and its Potential in Live Video Streaming for XR Headsets.* Poster presented at MobiCom '24. https://doi.org/10.1145/3636534.3697437
- Guo, Y., **Wang, S.,** Ghoshal, M., Hu, Y. C., & Koutsonikolas, D. (2023). *The power of asynchronous SLAM in multi-user AR over cellular networks: A measurement study.* In Proceedings of the 2023 Workshop on Emerging Multimedia Systems (EMS '23). https://doi.org/10.1145/3609395.3610598

TECHNICAL SKILLS

Programming Languages: Python, Shell Scripting, SQL, JavaScript, C++/C, , Java, Swift
Wireless Technologies: 5G, LTE, LEO Satellite Networks, Wi-Fi, Bluetooth
Tools: Wireshark, Tcpdump, iPerf, Nuttcp, XCAL, Matlab, Docker, VirtualBox, MySQL, Grafana, Snowflake, Git
Operating Systems: Ubuntu, CentOS, iOS, Android, MacOS, Windows