Minhao Cui

Ph.D.
Tel: +1 (413)-275-3796
Email: minhao.cui97@gmail.com
https://people.cs.umass.edu/minhaocui/

RESEARCH INTEREST

- **Wireless Sensing**: Pervasive Signal Sensing, In-Vehicle Sensing, LoRa Sensing;
- **HCI**: Wearable Computing, Activity Recognition, Vital Sign Detection;
- **Cyber-physical Systems**: Cybersecurity, Human-in-the-loop Systems, Energy Harvesting;
- **Wireless Networking**: Visible Light Communication, Backscatter Communication, LoRa Communication;
- **Artificial Intelligence**: Physics-guided Model, Embodied AI, Digital Twin;

EDUCATION

University of Massachusetts Amherst, US 09/2019 - 02/2025
- Ph.D. in Computer Science
- Advised by **Prof. Jie Xiong**
- Working closely with **Prof. Deepak Ganesan** and **Prof. Lili Qiu**

Dalian University of Technology, China 09/2015 - 06/2019
- B.E. in Network Engineering
- Rank: 1/124

INDUSTRY EXPERIENCE

Microsoft Research Asia, China 05/2024 - 08/2024
- Research Intern in Wireless Group
- Project: Wireless sensing with GNSS signals; AI-empowered wireless sensing model
- "Stars of Tomorrow" certificate

SELECTED HONORS & AWARDS

- Stars of Tomorrow, Microsoft Research Asia   2024
- MobiSys Rising Star   2024
- MobiSys Student Travel Grant   2024
- Dr. Phil Bernstein Graduate Scholarship   2023
- SenSys Best paper Award (1/208)   2022
- Common Good Fellowship   2022
- Ph.D. Candidacy with Distinction, UMass Amherst   2022
- MobiCom Student Travel Grant   2021
- MobiCom Best Paper Honorable Mention Award (3/384)   2020
- National Scholarship (top 5%), China   2017 – 2019

SELECTED PUBLICATIONS

- Making LoRa Sensing Coexist with Communication;
  Binbin Xie, **Minhao Cui**, Deepak Ganesan, Jie Xiong
  ACM MobiCom 2025 (acceptance rate = 17.1%)

- GPSense: Passive Sensing with Pervasive GPS Signals;
  Huixin Dong*, **Minhao Cui***, Ning Wang, Lili Qiu, Jie Xiong, Wei Wang
  (*Equal contribution)
  ACM MobiCom 2024 (acceptance rate = 20.9%)

- EVLeSen: In-Vehicle Sensing with EV-Leaked Signal;
  Minhao Cui, Binbin Xie, Qing Wang, Jie Xiong
  ACM MobiCom 2024 (acceptance rate: 20.9%)

- AquaKey: Exploiting the Randomness of the Underwater Visible Light Communication Channel for Key Extraction;
  Lupeng Zhang, Pingchuan Wang, **Minhao Cui**, Jingwen Wei, Yu Tian, Jingchi Zhang, Jie Xiong, Lei Wang
  ACM IMWUT/UbiComp 2024

- Wall Matters: Rethinking the Effect of Wall for Wireless Sensing;
  Binbin Xie, **Minhao Cui**, Deepak Ganesan, Jie Xiong
  ACM IMWUT/UbiComp 2024

- DancingAnt: Body-empowered Wireless Sensing Utilizing Pervasive Radiations from Powerline;
  Minhao Cui, Binbin Xie, Qing Wang, Jie Xiong
  ACM MobiCom 2023 (acceptance rate = 24.4%)

- LeakageScatter: Backscattering LiFi-leaked RF Signals;
  Muhammad Sarmad Mir*, **Minhao Cui***, Borja Genoves Guzman, Qing Wang, Jie Xiong, Domenico Giustiniano (*Equal contribution)
  ACM MobiHoc 2023 (acceptance rate = 22.1%)

- Boosting the Long Range Sensing Potential of LoRa;
  Binbin Xie, **Minhao Cui**, Deepak Ganesan, Xiangru Chen, Jie Xiong
  ACM MobiSys 2023 (acceptance rate = 20.7%)

- Bracelet+: Harvesting the Leaked RF Energy in VLC with Wearable Bracelet Antenna;
  Minhao Cui, Qing Wang, Jie Xiong
  ACM SenSys 2022 (acceptance rate = 25%)
  Best Paper Award (1/208)

- RadioInLight: Doubling the Data Rate of VLC Systems;
  Minhao Cui, Qing Wang, Jie Xiong
  ACM MobiCom 2021 (acceptance rate = 17.8%)

- Breaking the Limitations of Visible Light Communication Through Its Side Channel;
  Minhao Cui, Qing Wang, Jie Xiong
  ACM SenSys 2020 (acceptance rate = 20%)

- Sniffing Visible Light Communication Through Walls;
  Minhao Cui, Yuda feng, Qing Wang, Jie Xiong
  ACM MobiCom 2020 (acceptance rate = 17.9%)
  Best Paper Honorable Mention Award (3/384)

TEACHING &	**Teaching Assistant**
MENTORING	• COMPSCI 240 - Reasoning Under Uncertainty 2020-2024
EXPERIENCE	Held weekly discussion sessions, 200-300 students enrolled

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TEACHING &
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EXPERIENCE

Teaching Assistant
- COMPSCI 240 - Reasoning Under Uncertainty   2020-2024
  Held weekly discussion sessions, 200-300 students enrolled
  Designed the Quiz, Homework and Exams
  Highly rated by both instructors and students

Mentorship
- Xiangru Chen, Duke MS
  Research topic: Wide-range Sensing.
  Output: a full paper at MobiSys 2023
- Dennis Yatsula, UMass BS
  Research topic: Near-field Sensing.
  Output: a full paper at MobiCom 2023
- Lupeng Zhang, DLUT PhD
  Research topic: Physical Key Extraction
  Output: a full paper at IMWUT 2024
- Pingchuan Wang, DLUT MS
  Research topic: VLC-based Sensing
  Output: a full paper under submission at MobiCom 2025
- Wenwei Li, PKU PhD
  Research topic: Solid-based Acoustic Sensing
  Output: a full paper under submission at MobiCom 2025

COMMUNITY
SERVICES

Conference Review
- ACM IMWUT/UbiComp   2025
- ACM IMWUT/UbiComp   2024
- IEEE Ubiquitous Intelligence and Computing (UIC)   2024
- ACM MobiCom S3 Workshop   2024
- IEEE TrustCom   2024
- IEEE Radar Conference (RadarConf)   2023
- IEEE International Conference on Communications (ICC)   2021

Journal Review
- IEEE/ACM Transactions on Networking (TON)   2024
- IEEE Transactions on Mobile Computing (TMC)   2022, 2024
- IEEE Transactions on Communications (TCOM)   2023, 2024

INVITED
TALKS

University and Industry Talks
- Peking University, Beijing, China   July 2024
- Seoul National University, Seoul, S. Korea   July 2024
- Microsoft Research Asia, Shanghai, China   June 2024
- Dalian University of Technology, Dalian, China   Dec 2023
- Delft University of Technology, Delft, Netherlands   Oct 2023

- Northwest University, Virtual   May 2022

<u>Conference Talks</u>
- MobiSys 2024 Rising Star, Tokyo, Japan   June 2024
- MobiCom 2023 Main Conference, Madrid, Spain   Oct 2023
- SenSys 2022 Main Conference, Boston, MA   Nov 2022
- MobiCom 2021 Main Conference, New Orleans, LA   March 2022
- SenSys 2021 Main Conference, Virtual   Nov 2020
- MobiCom 2020 Main Conference, Virtual   Sep 2020