Yidong Ren

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EDUCATION

Michigan State University – East Lansing, USA (GPA: 4.0/4.0)   Sept 2021 – Present
PhD Candidate in Computer Science   Advisor: Dr. Zhichao Cao
Research Interests: Internet of Things | Wireless Networks | AI for wireless

University of Electronic Science and Technology of China – Chengdu, China   Sept 2017 – June 2021
Bachelor of Engineering   Major: Electronic & Information Engineering

BENCHMARK | DATASETS

NELoRa-Bench: A Benchmark for Neural-enhanced LoRa Demodulation
Jialuo Du, **Yidong Ren**, Mi Zhang, Yunhao Liu, Zhichao Cao
International Conference on Learning Representations **(ICLR 2023)** Workshop on ML for IoT **(Oral)**   May. 5, 2023

CONFERENCE PUBLICATION

[C1] SateRIoT: High-performance Ground-Space Networking for Rural IoT
Yidong Ren, Amalinda Gamage, Li Liu, Mo Li, Shigang Chen, Younsuk Dong, Zhichao Cao
The 24th Annual International Conference on Mobile Computing And Networking **(MobiCom 2024)**   Sep. 30 – Oct 4, 2024
[Acceptance ratio: 103/494 = 20.9%]

[C2] Demeter: Reliable Cross-soil LPWAN with Low-cost Signal Polarization Alignment
Yidong Ren, Wei Sun, Jialuo Du, Huaili Zeng, Younsuk Dong, Mi Zhang, Shigang Chen, Yunhao Liu, Tianxing Li, Zhichao Cao
The 24th Annual International Conference on Mobile Computing And Networking **(MobiCom 2024)**   Sep. 30 – Oct 4, 2024
[Acceptance ratio: 103/494 = 20.9%]

[C3] LoRaTrimmer: Optimal Energy Condensation with Chirp Trimming for LoRa Weak Signal Decoding
Jialuo Du, **Yidong Ren**, Li Liu, Zhichao Cao, Yunhao Liu
The 24th Annual International Conference on Mobile Computing And Networking **(MobiCom 2024)**   Sep. 30 – Oct 4, 2024
[Acceptance ratio: 103/494 = 20.9%]

[C4] ChirpTransformer: Versatile LoRa Encoding for Low-power Wide-area IoT
Chenning Li*, **Yidong Ren*** (Co-primary author *), Shuai Tong, Shakhrul Iman Siam, Mi Zhang, Jiliang Wang, Yunhao Liu, Zhichao Cao
ACM International Conference on Mobile Systems, Applications, and Services **(MobiSys 2024)**   Jun. 3 – 7, 2024
[Acceptance ratio: 43/263 = 16.3%]

[C5] SRLoRa: Neural-enhanced LoRa Weak Signal Decoding with Multi-gateway Super Resolution
Jialuo Du, **Yidong Ren**, Zhui Zhu, Chenning Li, Zhichao Cao, Qiang Ma, Yunhao Liu
ACM International Symposium on Mobile Ad Hoc Networking and Computing **(MobiHoc 2023)**   Oct. 23 – 26, 2023
[Acceptance ratio: 30/136 = 22.1%]

* denotes authors contributed equally

[C6] Prism: High-throughput LoRa Backsactter with Non-linear Chirp
Yidong Ren, Puyu Cai, Jinyan Jiang, Jialuo Du, Zhichao Cao
IEEE International Conference on Computer Communications **(INFOCOM 2023)**   May. 17 – 20, 2023
[Acceptance ratio: 252/1312 = 19.2%]

[C7] Is LoRaWAN Really Wide? Fine-grained LoRa Link-level Measurement in An Urban Environment
Yidong Ren* (Co-primary author *), Li Liu*, Chenning Li*, Zhichao Cao, Shigang Chen
IEEE International Conference on Network Protocols **(ICNP 2022)**   Oct. 30 – Nov. 2, 2022
[Acceptance ratio: 33/154 = 21.4%]

JOURNAL PUBLICATION
[J1] Channel Adapted Antenna Augmentation for Improved Wi-Fi Throughput
Yanbo Zhang, Weiping Sun, **Yidong Ren**, Sung-ju Lee, Mo Li
IEEE Transactions on Mobile Computing **(TMC)** vol. 22, no. 11, pp. 6297-6310   Aug. 1, 2022

TALK
2024. Tsinghua University: Reliable Cross-soil LPWAN with Low-cost Signal Polarization Alignment
Host: Prof. Yunhao Liu and Prof. Jiliang Wang

AWARDS
MobiSys 2024 Student Travel Grant (US National Science Foundation funded)
MobiHoc 2023 Student Travel Grant (US National Science Foundation funded)
ICNP 2022 Student Travel Grant (IEEE Computer Society funded)

PROJECT EXPERIENCE
[1] A Large-scale Agriculture Data Collection and Analysis System with LoRa
Develop advanced IoT systems based on LoRa (long range communication) for agricultural data collection and analysis.
Michigan State University, USA   Aug. 2021 – Present

TEACHING EXPERIENCE

CSE891: AIoT-Artificial Intelligence in the Edge,   Michigan State University, USA
Guest Lecturer   Fall 2023
CSE891: AIoT-Artificial Intelligence in the Edge,   Michigan State University, USA
Teaching Assistant   Fall 2022
CSE220: Programming in C,   Michigan State University, USA
Teaching Assistant   Spring 2022, Spring 2023

PROFESSIONAL SERVICE
- **Program Committee:**
- IEEE ICPADS 2024 Technical Program Committee
  ACM MobiCom 2024 Artifact Evaluation Program Committee (both summer and winter rounds)
  ACM MobiSys 2024 Artifact Evaluation Program Committee
- **Invited Reviewer:**
  IEEE/ACM Transactions on Networking (2023 2024)
  ACM Transactions on Sensor Networks (2022 2023 2024)
  MobiQuitous 2022

* denotes authors contributed equally