Yidong Ren

Department of Computer Science and Engineering, Michigan State University, East Lansing, MI, 48824

Homepage: https://ydren001.github.io/ Phone: (+1) (517) 219 6227 E-mail: renyidon@msu.edu

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

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 (Paper Code)

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] ChirpTransformer: Versatile LoRa Encoding for Low-power Wide-area IoT (To appear)

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

[C2] Demeter: Reliable Cross-soil LPWAN with Low-cost Signal Polarization Alignment (*To appear*)

Yidong Ren, Wei Sun, Jialuo Du, Huaili Zeng, Yonsuk Dong, Mi Zhang, Shigang Chen, Yunhao Liu, Tianxing Li, Zhichao Cao

ACM Annual International Conference On Mobile Computing And Networking **(MobiCom 2024)** Sep. 30 – Oct 4, 2024

[C3] 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%]

[C4] Prism: High-throughput LoRa Backsactter with Non-linear Chirp (Paper)

Yidong Ren, Puyu Cai, Jingyan Jiang, Jialuo Du, Zhichao Cao

IEEE International Conference on Computer Communications **(INFOCOM 2023)** May. 17 – 20, 2023

[Acceptance ratio: 252/1312 = 19.2%]

[C5] Is LoRaWAN Really Wide? Fine-grained LoRa Link-level Measurement in An Urban Environment (Paper Code)

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%] (* Co-primary author)

JOURNAL PUBLICATION

[J1] Channel Adapted Antenna Augmentation for Improved Wi-Fi Throughput (Paper)

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

* denotes authors contributed equally

AWARDS

MobiHoc 2023 Student Travel Grant (US National Science Foundation funded)
ICNP 2022 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

SKILLS

Python, C, MATLAB, Java, Latex, Android Studio.

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:**
  ACM MobiCom 2024 Artifact Evaluation Program Committee
  ACM MobiSys 2024 Artifact Evaluation Program Committee
- **Reviewer:**
  2024: ACM Transactions on Sensor Networks
  2023: IEEE/ACM Transactions on Networking | ACM Transactions on Sensor Networks
  2022: ACM Transactions on Sensor Networks | MobiQuitous

* denotes authors contributed equally