# Kang Yang

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## RESEARCH INTERESTS

AI-Enabled Design and Optimization of Cyber-Physical Systems

## WORK EXPERIENCE

**Postdoctoral Scholar, University of California, Los Angeles** *Jan. 2025 – Present*
Department of Electrical and Computer Engineering
Advisor: Mani Srivastava, Distinguished Professor of Electrical and Computer Engineering and Computer Science

## EDUCATION

**University of California, Merced** *Merced, CA, USA*
**Ph.D.** in Electrical Engineering and Computer Science *Jan. 2020 – Nov. 2024*
Thesis Title: *Advanced LoRa Networking and Sensing for IoT Applications*
Advisor: Wan Du, Associate Professor of Computer Science and Engineering

**Xi'an Jiaotong University** *Xi'an, China*
**M.S.**, School of Automation Science and Engineering *Sept. 2016 – Jun. 2019*

**Xi'an University of Science and Technology** *Xi'an, China*
**B.S.**, School of Electrical and Control Engineering *Sept. 2012 – Jun. 2016*

## HONORS AND AWARDS

- **Best Paper Award**, Inaugural ACM/IEEE International Conference on Embedded Artificial Intelligence and Sensing Systems (SenSys), 2026
- **FAME Awardee**, Future Academics and Mentorship Excellence Workshop, University of California, Riverside, 2026
- **Oral Award**, AI4TS Workshop at AAAI 2026
- **Postdoctoral Fellowship, UCLA Institute for Digital Research and Education (IDRE)**, 2025
- **NeurIPS Spotlight Award**, 2025
- **Rising Stars in EECS Workshop at MIT**, 2025
- **Rising Stars**, 23rd ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2025
- **Best Demo Award**, 23rd ACM Conference on Embedded Networked Sensor Systems (SenSys), 2025
- **Farms Food Future Innovation Initiative (F3) R&D GSR Award**, 2024 – 2025
- **Farms Food Future Innovation Initiative (F3) R&D GSR Award**, 2023 – 2024
- **UC Merced Professional Development Award**, 2024
- **UC Merced GSA Conference Travel Award**, 2022
- **Best Paper Runner-up Award**, 17th IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2021

## PUBLICATIONS

**Publication Record:** 33 papers, including 16 first-/co-first-author peer-reviewed papers, 6 Transactions articles, 3 SenSys papers, 1 NeurIPS Spotlight paper, 1 CVPR paper, 1 MobiSys paper, 1 IPSN paper, and 1 e-Energy paper.
*An asterisk (*) denotes co-first authorship.*
*Conferences*

**C13** [**ISLPED '26**] *FM-CAC: Carbon-Aware Control for Battery-Buffered Edge AI via Time-Series Foundation Models.*
**Kang Yang**, Walid A. Hanafy, Prashant Shenoy, and Mani Srivastava.
The IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED), 2026.

**C12** [**CVPR '26**] *Generalizable Radio-Frequency Radiance Fields for Spatial Spectrum Synthesis.*
**Kang Yang**, Yuning Chen, and Wan Du.
The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026.

**C11** [**e-Energy '26**] *CarbonX: An Open-Source Tool for Computational Decarbonization Using Time Series Foundation Models.*
Diptyaroop Maji*, **Kang Yang***, Prashant Shenoy, Ramesh K. Sitaraman, and Mani Srivastava.
The 17th ACM International Conference on Future and Sustainable Energy Systems (e-Energy), 2026.

**C10** [**SenSys '26**] *SoilX: Calibration-Free Comprehensive Soil Sensing Through Contrastive Cross-Component Learning.*
**Kang Yang***, Yuanlin Yang*, Yuning Chen*, Sikai Yang, Xinyu Zhang, and Wan Du.
The Inaugural ACM/IEEE International Conference on Embedded Artificial Intelligence and Sensing Systems (SenSys), 2026.
**Best Paper Award**

**C9** [**NeurIPS '25**] *GSRF: Complex-Valued 3D Gaussian Splatting for Efficient Radio-Frequency Data Synthesis.*
**Kang Yang**, Gaofeng Dong, Sijie Ji, Wan Du, and Mani Srivastava.
The 39th Conference on Neural Information Processing Systems (NeurIPS), 2025.
**Spotlight Award (Top 3.2% of 21K submissions)**

**C8** [**NeurIPS '25**] *ADMN: A Layer-Wise Adaptive Multimodal Network for Dynamic Input Noise and Compute Resources.*
Jason Wu, Yuyang Yuan, **Kang Yang**, Lance M. Kaplan, and Mani Srivastava.
The 39th Conference on Neural Information Processing Systems (NeurIPS), 2025.

**C7** [**NeurIPS '25**] *Benchmarking Spatiotemporal Reasoning in LLMs and Reasoning Models: Capabilities and Challenges.*
Pengrui Quan, Brian Wang, **Kang Yang**, Liying Han, and Mani Srivastava.
The 39th Conference on Neural Information Processing Systems (NeurIPS), 2025.

**C6** [**MobiSys '24**] *OrchLoc: In-Orchard Localization via a Single LoRa Gateway and Generative Diffusion Model-Based Fingerprinting.*
**Kang Yang**, Yuning Chen, and Wan Du.
The 22nd ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2024.

**C5** [**KDD '24**] *MARLP: Time-Series Forecasting Control for Agricultural Managed Aquifer Recharge.*
Yuning Chen, **Kang Yang**, Zhiyu An, Brady Holder, Luke Paloutzian, Khaled Bali, and Wan Du.
The 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2024.

**C4** [**IPSN '23**] *Link Quality Modeling for LoRa Networks in Orchards.*
**Kang Yang***, Yuning Chen*, Tingruixiang Su, and Wan Du.
The 22nd ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN), 2023.

**C3** [**SenSys '22**] *LLDPC: A Low-Density Parity-Check Coding Scheme for LoRa Networks.*
**Kang Yang** and Wan Du.
The 20th ACM Conference on Embedded Networked Sensor Systems (SenSys), 2022.

**C2** [**DCOSS '21**] *ATPP: A Mobile App Prediction System Based on Deep Marked Temporal Point Processes.*
**Kang Yang**, Xi Zhao, Jianhua Zou, and Wan Du.
The 17th IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), 2021.
**Best Paper Runner-Up Award**

**C1** [**SenSys '19**] *DeepAPP: A Deep Reinforcement Learning Framework for Mobile Application Usage Prediction.*
Zhihao Shen*, **Kang Yang***, Wan Du, Xi Zhao, and Jianhua Zou.
The 17th ACM Conference on Embedded Networked Sensor Systems (SenSys), 2019.

*Journals*

**J8** [**TMC**] *Generative Diffusion Model-Assisted Efficient Fingerprinting for In-Orchard Localization.*
**Kang Yang**, Yuning Chen, and Wan Du.
IEEE Transactions on Mobile Computing, vol. 24, no. 12, pp. 12833–12851, 2025.

**J7** [**TOSN**] *FLog: Link Quality Modeling for LoRa Networking in Orchards.*
**Kang Yang***, Yuning Chen*, and Wan Du.
ACM Transactions on Sensor Networks, vol. 21, no. 2, pp. 1–28, 2025.

**J6** [**ToN**] *RALoRa: Rateless-Enabled Link Adaptation for LoRa Networking.*
**Kang Yang**, Miaomiao Liu, and Wan Du.
IEEE/ACM Transactions on Networking, vol. 32, no. 4, pp. 3392–3407, 2024.

**J5** [**TOSN**] *A Low-Density Parity-Check Coding Scheme for LoRa Networks.*
**Kang Yang** and Wan Du.
ACM Transactions on Sensor Networks, vol. 20, no. 4, pp. 1–29, 2024.

**J4** [**TKDE**] *DMM: A Deep Reinforcement Learning-Based Map Matching Framework for Cellular Data.*
Zhihao Shen, **Kang Yang**, Xi Zhao, Jianhua Zou, and Wan Du.
IEEE Transactions on Knowledge and Data Engineering, vol. 36, no. 10, pp. 5120–5137, 2024.

**J3** [**TOSN**] *ATPP: A Mobile App Prediction System Based on Deep Marked Temporal Point Processes.*
**Kang Yang**, Xi Zhao, Jianhua Zou, and Wan Du.
ACM Transactions on Sensor Networks, vol. 19, no. 3, pp. 1–24, 2023.

**J2** [**TOSN**] *Driving Maneuver Anomaly Detection Based on Deep Auto-Encoder and Geographical Partitioning.*
Miaomiao Liu, **Kang Yang**, Yanjie Fu, Dapeng Oliver Wu, and Wan Du.
ACM Transactions on Sensor Networks, vol. 19, no. 2, pp. 1–22, 2023.

**J1** [**TMC**] *DeepAPP: A Deep Reinforcement Learning Framework for Mobile Application Usage Prediction.*
Zhihao Shen*, **Kang Yang***, Wan Du, Xi Zhao, and Jianhua Zou.
IEEE Transactions on Mobile Computing, vol. 22, no. 2, pp. 824–840, 2021.

*Workshops, Posters, and Demos*

**W4** [**AI4TS@AAAI '26**] *Spectral Predictability as a Fast Reliability Indicator for Time Series Forecasting Model Selection.*
Oliver Wang, Pengrui Quan, **Kang Yang**, and Mani Srivastava.
AI for Time Series Analysis: Theory, Algorithms, and Applications (AI4TS), AAAI 2026.
**Oral Award**

**W3** [**MobiSys '25 Rising Stars**] *Scalable and Adaptive RF Signal Propagation Modeling for Next-Generation Wireless Systems.*
**Kang Yang**.
The 23rd ACM Annual International Conference on Mobile Systems, Applications, and Services (MobiSys), 2025.

**W2** [**SenSys '25 Demo**] *Demo Abstract: Comprehensive Wireless Soil Component Sensing via VNIR and LoRa.*
Yuanlin Yang*, Yuning Chen*, **Kang Yang***, Sikai Yang, and Wan Du.
The 23rd ACM Conference on Embedded Networked Sensor Systems (SenSys), 2025.
**Best Demo Award**

**W1** [**SenSys '25 Poster**] *Poster Abstract: Scalable 3D Gaussian Splatting-Based RF Signal Spatial Propagation Modeling.*
**Kang Yang**, Wan Du, and Mani Srivastava.
The 23rd ACM Conference on Embedded Networked Sensor Systems (SenSys), 2025.

*Preprints and Under Review*

**P8** [**arXiv**] *RxGS: Receiver-Generalizable 3D Gaussian Splatting for Radio-Frequency Data Synthesis.*
**Kang Yang** and Mani Srivastava.
arXiv preprint arXiv:2605.24290, 2026.

**P7** [**arXiv**] *TS-Skill: A Benchmark for Evaluating Analytical Skills in Time-Series Question Answering.*
Liying Han*, **Kang Yang***, Oliver Wang*, Jason Wu, Pengrui Quan, Gaofeng Dong, Ozan Baris Mulayim, Sizhe Ma, Yuyang Yuan, Dezhi Hong, Mario Berges, and Mani Srivastava.
arXiv preprint arXiv:2605.24703, 2026.

**P6** [**Under Review**] *Phase-Aware 3D Gaussian Splatting Framework for Radio-Frequency Data Synthesis.*
**Kang Yang***, Yuanlin Yang*, Wan Du, and Mani Srivastava.
Manuscript under review, IEEE Transactions on Mobile Computing, 2026.

**P5** [**arXiv**] *GenRTC: Enabling Generative Visual Captions in Live Video Streaming.*
Yuning Chen, **Kang Yang**, Yuanlin Yang, and Wan Du.
Preprint forthcoming, 2026.

**P4** [**arXiv**] *Federated Hierarchical Anti-Forgetting Framework for Class-Incremental Learning with Large Pre-Trained Models.*
Fan Zhao, **Kang Yang**, and Wan Du.
Preprint forthcoming, 2026.

**P3** [**arXiv**] *Scaling Online Complex Event Detection via Synthetic Supervision and Mamba-Based Neural Algorithmic Reasoning.*
Liying Han, Gaofeng Dong, Xiaomin Ouyang, **Kang Yang**, Lance M. Kaplan, Federico Cerutti, and Mani Srivastava.
arXiv preprint arXiv:2502.07250, 2025.

**P2** [**arXiv**] *UniFi: Combining Irregularly Sampled CSI from Diverse Communication Packets and Frequency Bands for Wi-Fi Sensing.*
Gaofeng Dong, **Kang Yang**, and Mani Srivastava.
arXiv preprint arXiv:2512.22143, 2025.

**P1** [**arXiv**] *See Behind Walls in Real-Time Using Aerial Drones and Augmented Reality.*
Sikai Yang, **Kang Yang**, Yuning Chen, Fan Zhao, and Wan Du.
arXiv preprint arXiv:2410.13139, 2024.

## FUNDING AND FELLOWSHIPS

- **NSF Communications, Circuits, and Sensing-Systems (CCSS)**, Proposal No. 2525613/4.
  *"Generalizable and Adaptive RF Signal Generative Models for Next-Generation Wireless Communication and Sensing."*
  PIs: Wan Du (UC Merced) and Mani Srivastava (UCLA).
  Award Amount: $400K ($200K per institution).
  Role: Senior Personnel; contributed to proposal preparation and technical approach formulation.
  Status: Awarded, 2025.
- **Institute for Digital Research and Education (IDRE) Postdoctoral Fellowship**, UCLA.
  *"IDRE Postdoctoral Fellowship supporting postdoctoral research in digital and computational methods."*
  Award Amount: $5,000.
  Role: Postdoctoral Fellow.
  Status: Awarded, 2025.
- **Farms Food Future (F3) R&D GSR Program**, Economic Development Administration.
  *"Reliable and Energy-Efficient LoRa Networks for Smart Irrigation and Groundwater Recharging in Orchards."*
  Award Period: Aug. 2023 – Aug. 2024.
  Role: Awardee and Project Lead.
  Status: Completed.
- **Farms Food Future (F3) R&D GSR Program (Renewal)**, Economic Development Administration.
  *"Reliable and Energy-Efficient LoRa Networks for Smart Irrigation and Groundwater Recharging in Orchards."*
  Award Period: Aug. 2024 – Aug. 2025.
  Role: Awardee and Project Lead.
  Status: Completed.

## BOOK CHAPTER

*Mobile Big Data Analytics for Social Computing* — *Publishing House of Electronics Industry*
Author of Chapters 7 and 10. Print ISBN: 9787121401695.

## RESEARCH EXPERIENCE

**Research Intern**, University of California, Los Angeles — *Jun. 2024 – Sept. 2024*
*Focus: Efficient Generative Models for RF Data*
Advisor: Mani Srivastava

**Research Intern**, University of California, Merced — *Jan. 2022 – Jun. 2023*
*Focus: Artificial Intelligence of Things (AIoT)*

**Research Assistant**, Xi'an Jiaotong University, Xi'an, China — *Jun. 2019 – Dec. 2019*
*Focus: Mobile Computing*

## TEACHING EXPERIENCE

**Teaching Assistant**, Department of Computer Science and Engineering, University of California, Merced
*CSE 005: Introduction to Computer Applications* — *Spring 2021*
*CSE 150: Operating Systems* — *Fall 2020 and Fall 2021*
*CSE 021: Introduction to Computing II* — *Spring 2020*

## MENTORING

Yuning Chen, Ph.D. student at UC Merced — *Spring 2023 – Spring 2024*
*Research Outcome: one IPSN paper, one KDD paper, and one manuscript under review.*

Tingruixiang Su, Undergraduate student at UC Merced — *Spring 2023*
*Research Outcome: one IPSN paper.*

Yuanlin Yang, Ph.D. student at UC Merced — *Spring 2024 – Fall 2024*
*Research Outcome: one SenSys paper and one manuscript under review.*

Fan Zhao, Ph.D. student at UC Merced — *Fall 2024*
*Research Outcome: one manuscript under review.*

Jason Wu, Ph.D. student at UCLA — *Spring 2025 – Present*
*Research Outcome: one NeurIPS paper.*

Pengrui Quan, Ph.D. student at UCLA — *Spring 2025 – Present*
*Research Outcome: one NeurIPS paper.*

Gaofeng Dong, Ph.D. student at UCLA — *Spring 2025 – Present*
*Research Outcome: one manuscript under review.*

Diptyaroop Maji, Ph.D. student at University of Massachusetts Amherst — *Spring 2025 – Present*
*Research Outcome: one e-Energy paper.*

Oliver Wang, Undergraduate student at UCLA — *Spring 2025 – Present*
*Research Outcome: one AI4TS workshop paper at AAAI and one manuscript under review.*

Samyak Kakatur, Master's student at UCLA — *Fall 2025*
*Research Project: carbon-aware adaptive systems.*

Sajal Das Shovon, Ph.D. student at University of Memphis — *Fall 2025 – Present*
*Research Project: physiology-based pain-detection systems.*

Liying Han, Ph.D. student at UCLA — *Fall 2025 – Present*
*Research Outcome: two manuscripts under review.*

# PROFESSIONAL SERVICE

*Program Committee*

- NAS 2026 (International Conference on Networking, Architecture, and Storage)
- NeurIPS 2026
- ACM/IEEE SenSys Demo 2026
- ECCV 2026
- SIGKDD 2026
- CVPR 2026
- ICLR 2026
- AAAI 2026
- ACM MobiCom Demo 2025
- ACM BuildSys 2025
- USENIX ATC 2025
- ACM CHI 2025
- IEEE ICC 2024
- IEEE MECOM 2024
- ACM SenSys 2022 Shadow Program Committee
- IEEE GLOBECOM 2021

*Journal Reviewer*

- ACM Transactions on Internet of Things (Distinguished Reviewer Board)
- ACM Transactions on Sensor Networks (Distinguished Reviewer Board)
- IEEE/ACM Transactions on Networking
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Visualization and Computer Graphics
- Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
- IEEE Transactions on Wireless Communications
- IEEE Internet of Things Journal
- IEEE Transactions on Network Science and Engineering
- Data-Centric Engineering
- Journal of Systems Science and Systems Engineering
- Sensors
- The Journal of Supercomputing

*Editorial Activity*

- Guest Editor, Special Issue on Wireless Systems, Computers, Materials & Continua (CMC) 2026
- Guest Editor, Special Issue on IoT and Distributed Computing, IoT 2025
- Guest Editor, Special Issue on Advances in Distributed Learning and Optimization over Networks: Techniques, Algorithms, and Applications, IoT 2025

*Organizer*

- General Co-Chair, 2nd ACM International Workshop on Foundation Models for Energy-Efficient Buildings, Cities, Transportation, and Sustainability (FMSust) at ACM BuildSys 2026

# PRESENTATIONS

- *Time Series Foundation Models (TSFMs) for Carbon-Aware Research and Sustainability*
  *Institute for Digital Research & Education (IDRE) Workshop, UCLA* Feb. 2026
- *Global Carbon Intensity Forecasting Through Time Series Foundation Models*
  *Invited Talk, FMSust Workshop, ACM BuildSys*, Golden, CO, USA Nov. 2025
- *Scalable and Adaptive RF Signal Propagation Modeling for Next-Generation Wireless Systems*
  *Rising Stars Talk, ACM MobiSys*, Anaheim, CA, USA Jun. 2025
- *Improving the Energy Efficiency and Reliability of LoRa Networks Using Coding Techniques*
  *EECS Seminar*, University of California, Merced, CA, USA Mar. 2024
- *LLDPC: A Low-Density Parity-Check Coding Scheme for LoRa Networks*
  *Conference Talk, ACM SenSys*, Boston, MA, USA Nov. 2022
- *ATPP: A Mobile App Prediction System Based on Deep Marked Temporal Point Processes*
  *Conference Talk, IEEE DCOSS*, Virtual Jun. 2021