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Yifei Sun

PhD Candidate at HKU



RESEARCH INTEREST

Sensing-assisted Radio Resource Management in mmWave-based Wireless Communication Systems

Resource allocation, scheduling, MDP, dynamic programming, reinforcement learning

Algorithm Design and System Implementation for Wireless Sensing Applications in both Sub-6 GHz and mmWave Band

Environment mapping, wireless localization/tracking, human activity recognition, mmWave link blockage prediction, passive radar, multi-target tracking

EDUCATION

PhD, Computer Science, Dept. of Computer Science, HKU

2019.09 - 2025.07 (expected)

B.Eng., Communications Engineering, Dept. of Electronic and Electrical Engineering, SUSTech

2015.09 - 2019.06

PUBLICATIONS

Preprints:

- [P1] **Y. Sun**, C. Yu, Y. Luo, X. Han, H. Tan, R. Wang, F. Lau,
“An Experimental Study of Passive UAV Tracking with Digital Arrays and Cellular Downlink Signals”,
submitted to IEEE Open Journal of the Communications Society (OJCOMS) (IF:6.3). (accepted with mandatory revisions)

Conferences:

- [C3] **Y. Sun**, B. Lv, R. Wang, H. Tan, and F. Lau,
“Dynamic Uploading Scheduling in mmWave-Based Sensor Networks via Mobile Blocker Detection”,
IEEE International Conference on Parallel and Distributed Systems (ICPADS) (CCF C), 2023.
- [C2] **Y. Sun**, B. Lv, R. Wang, H. Tan, and F. Lau,
“Predictive Resource Allocation in mmWave Systems with Rotation Detection”,
IEEE International Conference on Communications (ICC) (CCF C), 2023.
- [C1] J. Li*, C. Yu*, Y. Luo*, **Y. Sun***, and R. Wang, (“*” denotes equal contribution)
“Passive Motion Detection via mmWave Communication System”,
IEEE Vehicular Technology Conference (VTC), 2022.

Journals:

- [J4] **Y. Sun**, B. Lv, R. Wang, H. Tan, and F. Lau,
“Dynamic Uploading Scheduling in mmWave-Based Sensor Networks with Blockage Prediction”,
ACM Transactions on Sensor Networks (TOSN) (IF:3.9, **CCF B**), 2024.
- [J3] **Y. Sun**, B. Lv, R. Wang, H. Tan, and F. Lau,
“Predictive Delay-Aware Scheduling with Receiver Rotation Detection and mmWave Channel Learning”,
IEEE Transactions on Wireless Communications (TWC) (IF:8.9, **CCF B**), 2024.
- [J2] C. Yu, **Y. Sun**, Y. Luo, and R. Wang,
“mmAlert: mmWave Link Blockage Prediction via Passive Sensing”,
IEEE Wireless Communications Letters (WCL) (IF:4.6), 2023.
- [J1] **Y. Sun**, J. Li, T. Zhang, R. Wang, X. Peng, X. Han, and H. Tan,
“An Indoor Environment Sensing and Localization System via mmWave Phased Array”,
Journal of Communications and Information Networks (JCIN) (EI, Citations:19), 2022.

Patents:

- [T2] **Y. Sun**, R. Wang, B. Lv, W. Chen,
“Communication Method, Device, Equipment and Storage Medium”,
CN Patent, CN110912600B issued July 7, 2023.
- [T1] **Y. Sun**, R. Wang, W. Chen, X. Li,
“Method for Beam Forming by Predicting Millimeter Wave Channel Distribution through Angular Velocity”,
CN Patent, CN111106861B issued July 23, 2021.

VOLUNTEERING

Academic Services

TPC member: ICC'24 Workshop

Reviewer (journals): TWC, TCOM, TMC, IoTJ, OJVT, OJCOMS, WCL, CL

Reviewer (conferences): INFOCOM, ICC, GLOBECOM, ICPADS, WCNC, WoWMoM

Teaching Assistant

COMP2121 Discrete Mathematics (Spring 2023 and Autumn 2019, HKU)

EE205 Signals and Systems (Spring 2022, SUSTech)