Ji Chengwang

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Education

University of Macau 2022.08 – Present

- *Ph.D.* in Electrical and Computer Engineering Advisor: Prof. Ma Shaodan
- Research interests: Intelligent communication, integrated sensing and communication, reconfigurable antenna and surface for 6G.

Publications

- **C. Ji**, Q. Xue, H. Lu, J. Wang, Q. Peng, S. Ma and W. Zhang, "Reconfigurable codebook-based beamforming for RDARS-Aided mmWave MU-MIMO systems," IEEE Trans. Wireless Commun., Early access, 2025. (**SCI Q1**)
- **C. Ji**, K. Li, H. Lu, Q. Peng, J. Wang, S. Ma, "Model-driven deep learning enhanced joint beamforming and mode switching for RDARS-aided MIMO systems," IEEE Trans. Commun., under review, 2025. (**SCI Q1**)
- Q. Xue, **C. Ji**, S. Ma, J. Guo, Y. Xu, Q. Chen, and W. Zhang, "A survey of beam management for mmWave and THz communications towards 6G," IEEE Commun. Surveys Tuts., vol. 26, no. 3, pp. 1520–1559, 3rd Quart., 2024. **(SCI Q1)**
- **C. Ji**, Q. Peng, J. Wang, Z. Pei, and S. Ma, "Channel-aware mode switching enhanced RDARS-aided downlink mmWave MIMO systems," in Proc. IEEE International Conf. on Commun. (ICC), 2025. (**Flagship conference**)
- J. Wang, **C. Ji**, J. Guo, and S. Ma, "Demo: Reconfigurable distributed antennas and reflecting surface (RDARS)-aided integrated sensing and communication system," in Proc. IEEE International Conf. on Commun. in China (ICCC), 2023, pp. 1–2.

Projects

Integrated Sensing and Communications for the Low Altitude Economy Development in the Guangdong-Hong Kong-Macao Greater Bay Area 2025.07 – 2028.06

Core member — FDCT-MOST project (0114/2025/AMJ)

- Responsibilities: Sensing scheme design and prototype platform development for multimodal monitoring

Novel Active-Passive Hybrid Intelligent Metasurface-Assisted Sensing and Communications 2025.07 – 2028.06

Core member — FDCT, Funding Scheme for Scientific Research and Innovation project (0020/2025/RIB1)

- Responsibilities: Design of channel state information acquisition scheme for active-passive hybrid intelligent metasurface-assisted sensing and communication system

Active-Passive Hybrid Intelligent Metasurface-Assisted Active Detection Sensing Prototype Platform 2023.08 – 2024.08

Co-Principal Investigator

- Responsibilities: Signal extraction, system platform development, and validation platform testing

Active-Passive Intelligent Metasurface-Assisted Integrated Sensing and Communication Prototype Platform 2023.08 – 2024.08

Co-Principal Investigator—Presented at the 2023 International Conf. on Commun. in China (ICCC)

- Responsibilities: Design sensing and positioning algorithms; establish system platforms; conduct platform verification testing

The First 6G Intelligent Wireless Communication Systems Competition 2023

Core member—Excellent Award (7th-11th/1588)

- Competition Topic: Design of Wireless AI for Adaptive and Online Updating Requirements in Scenarios with Small Sample Conditions
- Responsibilities: Design small-sample channel expansion network

Aacademic Experience

Journal Reviewer: TWC, TCOM, WCM, China Communications, TVT, WCL, CL

Conference Reviewer: ICC, VTC, WCNC, WNSP

Conference Technical Program Committee (TPC) Member: 2026 IEEE International Conf. on Commun. (ICC) ISAC track

Teaching Assistant: Advanced Topics in Telecommunications (M.Sc. Course), Advanced Topics in Applied Probability and Statistics (M.Sc. Course), Modeling and Theoretical Analysis for Communication Systems (M.Sc. Course), Principles of Communication Systems (B.Sc. Course)

Awards

- UM PhD Assistantship 2022 – 2026