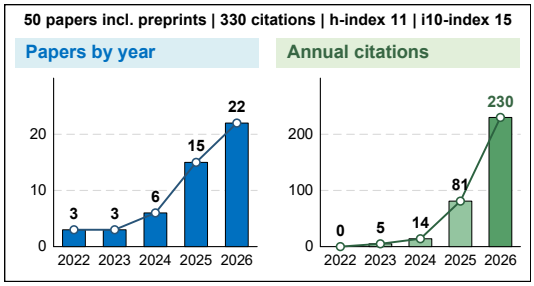
Yafei Wang

"Pursuing ideas that are both interesting and useful.

Ph.D. Candidate, Southeast University

wangyf@seu.edu.cn
Personal Website
Google Scholar
LinkedIn alphaXiv

- **Research directions:** AI-native wireless communications, cooperative LEO satellite MIMO networks, MU-MIMO/XL-MIMO, precoding, deep learning, CSI acquisition, feedback, and prediction.
- **Publications listed below:** 49 papers: 27 published journal articles, 1 under review, 13 conference papers (1 accepted), and 8 preprints.
- **Lead and co-first-author record:** JSAC ×1, TWC ×3, TCOM ×1, IEEE Wireless Communications ×1, WCL ×2; one additional manuscript under review at an IEEE Transactions journal; co-first-author TVT ×1.



Education

Southeast University, National Mobile Communications Research Laboratory — Nanjing, China
Ph.D. Candidate, advisor: Prof. Wenjin Wang — Mar. 2023–Present
Research focus: My doctoral research investigates intelligent multi-satellite cooperative transmission, exploiting statistical CSI and structural symmetries to develop scalable transceiver designs for non-terrestrial networks.

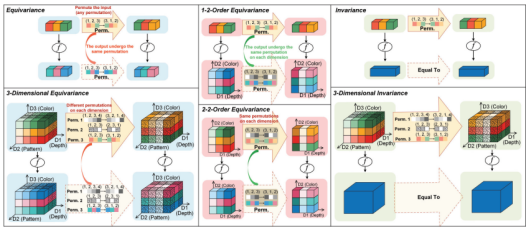
University of Luxembourg, SnT — Luxembourg
Visiting Ph.D. Researcher, advisor/collaborator: Prof. Bjorn Ottersten — Dec. 2024–Dec. 2025
Research focus: At SnT, I studied how synchronization errors and intersystem interference shape cooperative LEO transmission, developing distributed precoding and beamspace MIMO methods for network-scale operation.

Southeast University, National Mobile Communications Research Laboratory — Nanjing, China
M.E., Information and Communication Engineering, advisor: Prof. Wenjin Wang — Sep. 2021–Mar. 2023
Research focus: My master's research addressed reliable multiuser MIMO transmission under receiver and channel uncertainty, leading to work on constructive-interference precoding, coded soft demodulation, and channel-aging robustness.

Tianjin University — Tianjin, China
B.E., Communication Engineering — Sep. 2017–Jul. 2021
Research focus: My undergraduate training combined communication engineering with mathematical modeling and concluded with a GPA of 3.85/4.00, ranked 3rd among 129 students.

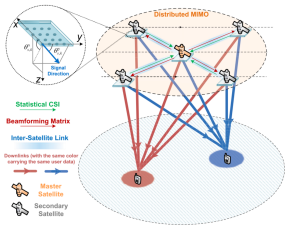
Selected Research Highlights

AI-native MU-MIMO



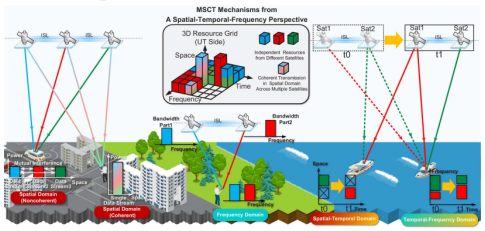
Tensor equivariance AI Framework
A general wireless-native AI framework exploiting high-dimensional, higher-order equivariances and invariances intrinsic to wireless communication tasks.
IEEE TWC, 2025. Code: TENN Toolbox.

Cooperative satellite MIMO



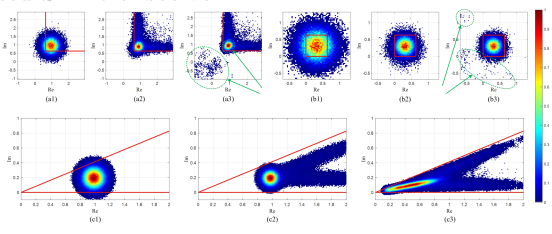
Statistical-CSI-based distributed precoding
Distributed precoding for OFDM-cooperative multi-satellite systems with statistical CSI and synchronization error modeling.
IEEE JSAC, 2026.

Multi-LEO cooperation



Spatial-temporal-frequency view of MSCT
Systematized multi-LEO cooperative transmission from spatial, temporal, and frequency domains, linking coherent/noncoherent modes to 6G NTN design.
IEEE Wireless Communications, 2026.

Coded SLP transceiver

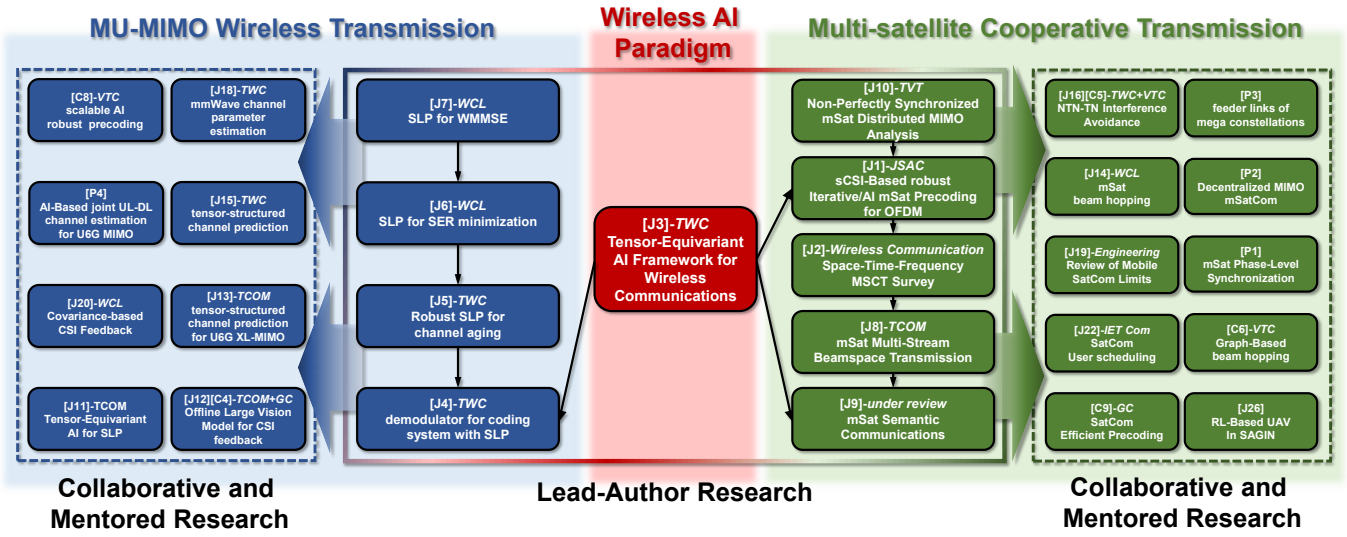


Soft demodulation for coded SLP systems
A soft-demodulation framework for coded multiuser MISO systems with symbol-level precoding, addressing non-Gaussian received signals.
IEEE TWC, 2024.

Research Trajectory Map

This map organizes my work into three connected research routes. The central solid region foregrounds the lead-author research that defines my academic profile, while the dashed outer branches place collaborative and mentored extensions around the two application routes. [J]/[C]/[P] refer to the journal, conference, and preprint paper list below. My early SLP research established a foundation in robust precoding and transceiver design. Building on this foundation, my current work advances along two application directions: AI-native MIMO and intelligent multi-satellite networks. Tensor-equivariant wireless AI provides a common modeling principle for both directions, enabling structure-aware learning across their distinct transmission problems.

- **Route 1 – MU-MIMO wireless transmission.** My lead-author work forms a continuous SLP line from WMMSE design [J7], to average-SER minimization [J6], robustness to channel aging [J5], and soft demodulation for coded SLP [J4]. It expands toward learning-aided precoding, large AI model for CSI feedback, CSI acquisition through channel parameter estimation and tensor-structured prediction.
- **Route 2 – Multi-satellite cooperative transmission.** This line progresses from distributed-MIMO modeling under imperfect synchronization [J10], to statistical-CSI-based robust/AI precoding for OFDM [J1], a space-time-frequency MSCT framework [J2], multi-stream beamspace transmission [J8], and semantic multi-satellite MIMO [J9]. Its extensions address cooperative-network architecture and operation, including interference management, feeder links, beam hopping, decentralized transmission, synchronization, and resource scheduling.
- **Route 3 – Wireless AI paradigm.** The tensor-equivariant framework [J3] identifies the permutation and tensor symmetries shared by MU-MIMO and multi-satellite mappings. It provides a common model-design principle for structured, scalable learning, supporting intelligent SLP and receiver design on the MU-MIMO route as well as distributed precoding on the multi-satellite route.



Abbreviations used in the map: AI, artificial intelligence; CSI, channel state information; MU-MIMO, multi-user multiple-input multiple-output; SLP, symbol-level precoding; WMMSE, weighted minimum mean-square error; OFDM, orthogonal frequency-division multiplexing; mSat/MSCT, multi-satellite/multi-satellite cooperative transmission; NTN/TN, non-terrestrial/terrestrial network; SatCom, satellite communications; SAGIN, space-air-ground integrated network; UAV, unmanned aerial vehicle; RL, reinforcement learning; mmWave, millimeter wave.

Selected Research

Lead-Author Research: Intelligent Multi-Satellite Cooperative Transmission

[J1] **Y. Wang**, V. N. Ha, K. Ntontin, H. Yan, W. Wang, S. Chatzinotas, and B. Ottersten, "Statistical CSI-based distributed precoding design for OFDM-cooperative multi-satellite systems," *IEEE Journal on Selected Areas in Communications*, vol. 44, pp. 3219–3236, 2026. [Link]

[J2] **Y. Wang**, X. Xu, Y. Zhu, W. Wang, R. Ding, S. Chatzinotas, and B. Ottersten, "Multi-LEO satellite cooperative transmission: A spatial-temporal-frequency perspective," *IEEE Wireless Communications*, vol. 33, no. 3, pp. 110–117, Jun. 2026. [Link]

[J9] **Y. Wang**, Y. Zhang, Y. Zhu, V. N. Ha, R. Ding, W. Wang, S. Chatzinotas, and B. Ottersten, "Semantic communication for multi-satellite massive MIMO transmission: A mixture of cooperative modes framework," under review at an IEEE Transactions journal; arXiv:2605.09013, May 2026. [arXiv]

[J8] **Y. Wang**, Y. Zhu, V. N. Ha, W. Wang, R. Ding, S. Chatzinotas, and B. Ottersten, "Multi-satellite multi-stream beamspace massive MIMO transmission," *IEEE Transactions on Communications*, vol. 74, pp. 15477–15494, 2026. [Link]

Lead-Author Research: AI-Native MU-MIMO and SLP Foundations

[J3] **Y. Wang**, H. Hou, X. Yi, W. Wang, and S. Jin, "Toward unified AI models for MU-MIMO communications: A tensor equivariance framework," *IEEE Transactions on Wireless Communications*, vol. 24, no. 12, pp. 10517–10533, Dec. 2025. [Link]

[J4] **Y. Wang**, H. Hou, W. Wang, X. Yi, and S. Jin, "Soft demodulator for symbol-level precoding in coded multiuser MISO systems," *IEEE Transactions on Wireless Communications*, vol. 23, no. 10, pp. 14819–14835, Oct. 2024. [Link]

[J5] **Y. Wang**, X. Yi, H. Hou, W. Wang, and S. Jin, "Robust symbol-level precoding for massive MIMO communication under channel aging," *IEEE Transactions on Wireless Communications*, vol. 23, no. 9, pp. 10864–10878, Sep. 2024. [Link]

[J6] **Y. Wang**, H. Hou, W. Wang, and X. Yi, "Symbol-level precoding for average SER minimization in multiuser MISO systems," *IEEE Wireless Communications Letters*, vol. 13, no. 4, pp. 1103–1107, Apr. 2024. [Link]

[J7] **Y. Wang**, W. Wang, L. You, C. G. Tsinos, and S. Jin, "Weighted MMSE precoding for constructive interference region," *IEEE Wireless Communications Letters*, vol. 11, no. 12, pp. 2605–2609, Dec. 2022. [Link]

Collaborative Research: Channel Acquisition, Large AI Models, and Generative RL

[J13] H. Hou, **Y. Wang**, X. Yi, W. Wang, D. T. M. Slock, and S. Jin, "Tensor-structured Bayesian channel prediction for upper mid-band XL-MIMO systems," *IEEE Transactions on Communications*, vol. 74, pp. 3968–3983, 2026. [Link]

[J12] J. Zhuang, **Y. Wang**, H. Hou, Y. Han, W. Wang, S. Jin, J. Wang, and B. Ottersten, "Extract the best, discard the rest: CSI feedback with offline large AI models," *IEEE Transactions on Communications*, vol. 74, pp. 14277–14293, 2026. [Link]

[C11] K. He, L. He, S. Tang, **Y. Wang**, and L. Fan, "Generative actor-critic with soft bridge policies," in *Advances in Neural Information Processing Systems (NeurIPS)*, Dec. 2026, accepted. [Link]

Publication List

49 papers: 27 published journal articles, 1 under review, 13 conference papers (1 accepted), and 8 preprints.

Journal Articles and Manuscripts

[J1] **Y. Wang**, V. N. Ha, K. Ntontin, H. Yan, W. Wang, S. Chatzinotas, and B. Ottersten, "Statistical CSI-based distributed precoding design for OFDM-cooperative multi-satellite systems," *IEEE Journal on Selected Areas in Communications*, vol. 44, pp. 3219–3236, 2026. [Link]

[J2] **Y. Wang**, X. Xu, Y. Zhu, W. Wang, R. Ding, S. Chatzinotas, and B. Ottersten, "Multi-LEO satellite cooperative transmission: A spatial-temporal-frequency perspective," *IEEE Wireless Communications*, vol. 33, no. 3, pp. 110–117, Jun. 2026. [Link]

[J3] **Y. Wang**, H. Hou, X. Yi, W. Wang, and S. Jin, "Toward unified AI models for MU-MIMO communications: A tensor equivariance framework," *IEEE Transactions on Wireless Communications*, vol. 24, no. 12, pp. 10517–10533, Dec. 2025. [Link]

[J4] **Y. Wang**, H. Hou, W. Wang, X. Yi, and S. Jin, "Soft demodulator for symbol-level precoding in coded multiuser MISO systems," *IEEE Transactions on Wireless Communications*, vol. 23, no. 10, pp. 14819–14835, Oct. 2024. [Link]

[J5] **Y. Wang**, X. Yi, H. Hou, W. Wang, and S. Jin, "Robust symbol-level precoding for massive MIMO communication under channel aging," *IEEE Transactions on Wireless Communications*, vol. 23, no. 9, pp. 10864–10878, Sep. 2024. [Link]

[J6] **Y. Wang**, H. Hou, W. Wang, and X. Yi, "Symbol-level precoding for average SER minimization in multiuser MISO systems," *IEEE Wireless Communications Letters*, vol. 13, no. 4, pp. 1103–1107, Apr. 2024. [Link]

[J7] **Y. Wang**, W. Wang, L. You, C. G. Tsinos, and S. Jin, "Weighted MMSE precoding for constructive interference region," *IEEE Wireless Communications Letters*, vol. 11, no. 12, pp. 2605–2609, Dec. 2022. [Link]

[J8] **Y. Wang**, Y. Zhu, V. N. Ha, W. Wang, R. Ding, S. Chatzinotas, and B. Ottersten, "Multi-satellite multi-stream beamspace massive MIMO transmission," *IEEE Transactions on Communications*, vol. 74, pp. 15477–15494, 2026. [Link]

[J9] **Y. Wang**, Y. Zhang, Y. Zhu, V. N. Ha, R. Ding, W. Wang, S. Chatzinotas, and B. Ottersten, "Semantic communication for multi-satellite massive MIMO transmission: A mixture of cooperative modes framework," under review at an IEEE Transactions journal; arXiv:2605.09013, May 2026. [arXiv]

[J10] S. Wu, **Y. Wang** (co-first author), G. Sun, W. Wang, J. Wang, and B. Ottersten, "Distributed beamforming for multiple LEO satellites with imperfect delay and Doppler compensations: Modeling and rate analysis," *IEEE Transactions on Vehicular Technology*, vol. 74, no. 9, pp. 14978–14984, Sep. 2025. [Link]

[J11] J. Zhang, **Y. Wang**, X. Yi, W. Wang, S. Jin, S. Chatzinotas, and B. Ottersten, "Unlocking symbol-level precoding efficiency through tensor equivariant neural network," *IEEE Transactions on Communications*, Early Access, Oct. 2026. [Link]

[J12] J. Zhuang, **Y. Wang**, H. Hou, Y. Han, W. Wang, S. Jin, J. Wang, and B. Ottersten, "Extract the best, discard the rest: CSI feedback with offline large AI models," *IEEE Transactions on Communications*, vol. 74, pp. 14277–14293, 2026. [Link]

[J13] H. Hou, **Y. Wang**, X. Yi, W. Wang, D. T. M. Slock, and S. Jin, "Tensor-structured Bayesian channel prediction for upper mid-band XL-MIMO systems," *IEEE Transactions on Communications*, vol. 74, pp. 3968–3983, 2026. [Link]

[J14] Z. Liu, **Y. Wang**, W. Wang, Y. Sun, H. Yan, and Z. Sun, "Multi-satellite coordinated beam hopping for interference mitigation under tilted beam effects: A graph-theoretic approach," *IEEE Wireless Communications Letters*, vol. 15, pp. 2313–2317, 2026. [Link]

[J15] H. Hou, **Y. Wang**, Y. Zhu, X. Yi, W. Wang, D. T. M. Slock, and S. Jin, "A tensor-structured approach to dynamic channel prediction for massive MIMO systems with temporal non-stationarity," *IEEE Transactions on Wireless Communications*, vol. 25, pp. 6869–6886, 2026. [Link]

[J16] W. Cao, **Y. Wang**, T. Ji, T. Cao, W. Wang, S. Chatzinotas, and B. Ottersten, "Interference in spectrum-sharing integrated terrestrial and satellite networks: Modeling, approximation, and robust transmit beamforming," *IEEE Transactions on Wireless Communications*, vol. 25, pp. 19660–19676, 2026. [Link]

[J17] Q. Dong, **Y. Wang**, N. Hu, Y. Zhu, W. Wang, and L. Chai, "Statistical CSI-based beamspace transmission for massive MIMO LEO satellite communications," *Entropy*, vol. 27, no. 12, 1214, Nov. 2025. [Link]

[J18] H. Hou, **Y. Wang**, X. Yi, W. Wang, and S. Jin, "Joint beam alignment and Doppler estimation for fast time-varying wideband mmWave channels," *IEEE Transactions on Wireless Communications*, vol. 23, no. 9, pp. 10895–10910, Sep. 2024. [Link]

[J19] W. Wang, Y. Zhu, **Y. Wang**, R. Ding, and S. Chatzinotas, "Toward mobile satellite internet: The fundamental limitation of wireless transmission and enabling technologies," *Engineering*, vol. 54, pp. 42–51, Nov. 2025. [Link]

[J20] J. Zhuang, X. He, **Y. Wang**, J. Liu, and W. Wang, "CovNet: Covariance information-assisted CSI feedback for FDD massive MIMO systems," *IEEE Wireless Communications Letters*, vol. 14, no. 3, pp. 641–645, Mar. 2025. [Link]

[J21] G. Sun, H. Hou, **Y. Wang**, W. Wang, W. Xu, and S. Jin, "Beam-sweeping design for mmWave massive grant-free transmission," *IEEE Journal of Selected Topics in Signal Processing*, vol. 18, no. 7, pp. 1249–1264, Oct. 2024. [Link]

[J22] S. Wu, G. Sun, **Y. Wang**, L. You, W. Wang, and R. Ding, "Low-complexity user scheduling for LEO satellite communications," *IET Communications*, vol. 17, no. 12, pp. 1368–1383, Jul. 2023. [Link]

[J23] B. Guo, Y. Zhu, Y. Zheng, **Y. Wang**, M. Cao, W. Wang, and L. Chai, "Joint beam position grouping and RO allocation for LEO satellite communication systems," *Electronics*, vol. 14, no. 23, 4731, Nov. 2025. [Link]

[J24] Y. Zhu, Z. Zhu, X. Xu, H. Hou, **Y. Wang**, W. Wang, and R. Ding, "Achieving constant-envelope waveform in CP-OFDMA framework," *IEEE Transactions on Vehicular Technology*, Early Access, 2026. [Link]

[J25] J. Fang, Y. Liang, G. Sun, H. Hou, **Y. Wang**, L. You, and W. Wang, "Polar-coded tensor-based unsourced random access with soft decoding," *IEEE Transactions on Communications*, vol. 73, no. 9, pp. 7044–7057, Sep. 2025. [Link]

[J26] J. Wan, K. He, **Y. Wang**, F. Liu, W. Wang, and S. Jin, "QoS-aware hierarchical reinforcement learning for joint link selection and trajectory optimization in SAGIN-supported UAV mobility management," *IEEE Transactions on Mobile Computing*, Early Access, 2026. [Link]

[J27] J. Wan, **Y. Wang**, J. Zhuang, X. Yi, W. Wang, and S. Jin, "CKM-assisted reinforcement learning for continuous-action UAV trajectory optimization in integrated satellite-terrestrial networks," *IEEE Transactions on Vehicular Technology*, Early Access, 2026. [Link]

[J28] J. Zhuang, J. Fang, G. Sun, Y. Zhu, **Y. Wang**, L. You, and W. Wang, "Joint channel estimation and active user detection for massive grant-free access in XL-MIMO system," *IEEE Internet of Things Journal*, vol. 13, no. 19, pp. 45673–45688, Oct. 2026. [Link]

Conference Papers

[C1] **Y. Wang**, V. N. Ha, K. Ntontin, W. Wang, S. Chatzinotas, and B. Ottersten, "Statistical CSI-based distributed precoding for multi-satellite cooperative transmission," in *Proc. IEEE VTC-Fall*, pp. 1–7, Oct. 2025. [Link]

[C2] **Y. Wang**, X. Yi, H. Hou, and W. Wang, "Robust symbol-level precoding for MIMO downlink transmission with channel aging," in *Proc. IEEE GLOBECOM*, pp. 5763–5768, Dec. 2023. [Link]

[C3] J. Zhang, **Y. Wang**, X. Yi, W. Wang, S. Jin, S. Chatzinotas, and B. Ottersten, "Accelerate symbol-level precoding using tensor equivariant neural network," in *Proc. IEEE ICC*, pp. 1–6, May 2026. [Link]

[C4] J. Zhuang, **Y. Wang**, H. Hou, Y. Han, W. Wang, and S. Jin, "OLAMCF: Offline large AI models enhanced CSI feedback in FDD massive MIMO systems," in *Proc. IEEE GLOBECOM*, pp. 3517–3522, Dec. 2025. [Link]

[C5] W. Cao, **Y. Wang**, W. Wang, S. Chatzinotas, and B. Ottersten, "Robust beamforming avoiding satellite interference in integrated terrestrial and satellite networks," in *Proc. IEEE VTC-Fall*, pp. 1–6, Oct. 2025. [Link]

[C6] Z. Liu, **Y. Wang**, W. Wang, and Z. Sun, "Graph coloring-based interference mitigation for mega constellations with multi-antenna gateway stations," in *Proc. IEEE VTC-Fall*, pp. 1–6, Oct. 2025. [Link]

[C7] H. Hou, **Y. Wang**, Y. Zhu, W. Wang, and D. T. M. Slock, "Dynamic channel prediction for massive MIMO systems with temporal non-stationarity," in *Proc. IEEE Mediterranean Conference on Communications and Networking*, Jul. 2025. [Link]

[C8] X. Tian, **Y. Wang**, G. Sun, X. Yi, and W. Wang, "Dual Transformer-based scalable robust precoding for massive MIMO transmission," in *Proc. IEEE VTC-Spring*, pp. 1–6, Jun. 2025. [Link]

[C9] S. Wu, **Y. Wang**, G. Sun, L. You, W. Wang, and R. Ding, "Energy and computational efficient precoding for LEO satellite communications," in *Proc. IEEE GLOBECOM*, pp. 1872–1877, Dec. 2023. [Link]

[C10] X. He, H. Hou, **Y. Wang**, W. Wang, S. Jin, S. Chatzinotas, and B. Ottersten, "Deep learning-based joint uplink-downlink channel estimation for upper mid-band massive MIMO systems," in *Proc. IEEE ICC*, pp. 1–6, May 2026. [Link]

[C11] K. He, L. He, S. Tang, **Y. Wang**, and L. Fan, "Generative actor-critic with soft bridge policies," in *Advances in Neural Information Processing Systems (NeurIPS)*, Dec. 2026, accepted. [Link]

[C12] G. Lu, Y. Li, H. Zhou, **Y. Wang**, and W. Wang, "Learning low-complexity robust transceiver for massive MIMO downlink with enhanced mobility," in *Proc. IEEE PIMRC*, pp. 282–287, Sep. 2022. [Link]

[C13] Y. Li, G. Lu, H. Zhou, **Y. Wang**, and W. Wang, "Outage-constrained transceiver power loading: A deep learning approach to robust massive MIMO downlink," in *Proc. IEEE BlackSeaCom*, pp. 197–202, Jun. 2022. [Link]

Preprints and Manuscripts Under Review

[P1] Y. Zhu, **Y. Wang**, C. Amatetti, A. Vanelli-Coralli, W. Wang, R. Ding, S. Chatzinotas, and B. Ottersten, "Toward multi-satellite cooperative transmission: A joint framework for CSI acquisition, feedback, and phase synchronization," arXiv:2603.28195, Mar. 2026. [arXiv]

[P2] W. Cao, **Y. Wang**, J. Zhang, X. Xu, W. Wang, S. Chatzinotas, and B. Ottersten, "Deep learning-based multi-satellite massive MIMO transmission: Centralized or decentralized?" arXiv:2603.20862, Mar. 2026. [arXiv]

[P3] Z. Liu, **Y. Wang**, T. Fang, W. Wang, and Z. Sun, "Time-continuous frequency allocation for feeder links of mega constellations with multi-antenna gateway stations," arXiv:2505.12429, May 2025. [arXiv]

[P4] X. He, H. Hou, **Y. Wang**, W. Wang, S. Jin, S. Chatzinotas, and B. Ottersten, "Deep learning-based joint uplink-downlink CSI acquisition for next-generation upper mid-band systems," arXiv:2512.02557, Dec. 2025. [arXiv]

[P5] W. Cao, Z. Lin, **Y. Wang**, W. Wang, Y. Wang, R. Ding, S. Chatzinotas, and B. Ottersten, "Robust decentralized multi-satellite massive MIMO transmission via knowledge distillation," arXiv:2608.29620, Aug. 2026. [arXiv]

[P6] J. Wan, **Y. Wang**, J. Zhuang, W. Wang, and T. Q. S. Quek, "Toward secure communications for a UAV swarm with movable antennas in SAGIN: CKM-enabled multi-agent reinforcement learning framework," arXiv:2608.27973, Aug. 2026. [arXiv]

[P7] J. Zhuang, H. Hou, **Y. Wang**, X. Yi, W. Wang, J. Wang, and B. Ottersten, "Toward alias-free channel extrapolation in upper mid-band systems: A spatial-frequency-temporal tensor learning approach," arXiv:2607.24330, Jul. 2026. [arXiv]

[P8] Z. Lin, Z. Wang, Y. Zhang, **Y. Wang**, O. Aouedi, Z. Fang, J. Xu, J. Yang, V. N. Ha, Y. Liu, M.-S. Alouini, and S. Chatzinotas, "Satellite intelligence: Distributed training, collaborative inference, and LLM adaptation in LEO constellation," arXiv:2610.35282, Oct. 2026. [arXiv]

Open Source and Professional Service

- **Professional service**: Lead organizer of a special session at IEEE SPAWC 2026. Journal reviewer for TWC, TCOM, TMC, IEEE Wireless Communications, TVT, WCL, and related IEEE journals. Conference reviewer for ACM Multimedia (ACM MM).
- **Open-source code**: TENN Toolbox, a Python/PyTorch implementation for tensor-equivariant neural networks in MU-MIMO precoding and user scheduling.

Honors, Awards, and Skills

Honors and awards

- National Scholarship for Doctoral Students, Ministry of Education of China, 2025 (RMB 30,000 / approx. USD 4,430, awarded annually to 2.65% of doctoral students nationwide).
- Huawei Scholarship for Doctoral Students, Huawei Technologies and Southeast University, 2025–2026 (RMB 10,000 / approx. USD 1,480, awarded annually to approximately 1.14% of SEU doctoral students).
- Zhangjiang Hi-Tech Award Fund, Southeast University, 2024–2025 (RMB 10,000 / approx. USD 1,480, one doctoral recipient, representing approximately 0.14% of doctoral students in the school).
- Academic Innovation Advanced Individual, Southeast University, 2023–2024 and 2024–2025 (received in two consecutive academic years, with annual recipients capped at 1% of eligible graduate students).
- SEU Innovation Capability Enhancement Plan for Doctoral Students, 2025–2026 (a university-level competitive doctoral research grant totaling RMB 60,000 / approx. USD 8,870, awarded on the basis of research achievements and potential).
- National Second Prize, China Post-Graduate Mathematical Contest in Modeling, 2021 (awarded to 10.6% of participating teams nationwide).
- Wiley Open Science Excellent Author Program, Apr.–Jun. 2023 (paper ranked among the journal's five most-downloaded China-authored articles of the quarter within three months of publication).

Technical skills and methods

- Wireless: precoding, beamforming, LEO satellite communications, CSI acquisition/feedback, MU-MIMO, XL-MIMO, OFDM.
- Methods: deep learning, convex/nonconvex optimization, manifold optimization, Bayesian estimation.
- Tools: MATLAB, Python, PyTorch, wireless-system simulation, numerical optimization, LaTeX.

Academic Referees

Prof. Wenjin Wang
Ph.D. Advisor
Professor, Southeast University
National Mobile Communications Research Laboratory
wangwj@seu.edu.cn

Prof. Bjorn Ottersten
Host Supervisor, SnT Research Visit
Full Professor, University of Luxembourg
Interdisciplinary Centre for Security, Reliability and Trust (SnT)
bjorn.ottersten@uni.lu

Prof. Shi Jin
Research Group Leader
Vice President and Professor, Southeast University
National Mobile Communications Research Laboratory
jinshi@seu.edu.cn