Yao WANG *Ph.D. Candidate*

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School of Telecommunications Engineering
Xidian University
Xi'an 710000, Shaanxi, China

RESEARCH INTERESTS

- 6G networks/intent-based networks; large-scale agentic networks, network large models; LLM agent; network management and orchestration; game theory

EDUCATIONS

- **Xidian University** Sep. 2022–Now
  Ph. D., School of Telecommunications Engineering Xi'an, China
  Advisor: Prof. Chungang Yang
- **Singapore University of Technology and Design (SUTD)** Dec. 2025–Now
  Visiting Scholar, Information Systems Technology and Design Singapore
  Advisor: Prof. Tony Q.S. Quek
- **Hebei University of Engineering** Sep. 2019–Jul. 2022
  M.E., School of Information and Electrical Engineering Handan, China
  Advisor: Prof. Long Zhang
  ***Outstanding Master's Thesis Award**, Hebei Province and Hebei University of Engineering*
- **Baoding University** Sep. 2015–Jul. 2019
  B.E., School of Information Engineering Baoding, China

GRANTS

[P1] **Co-Principal Investigator**, "Interoperable and Efficient Information Interaction Technology for UAV Swarm Networks" (Grant No. 2024JSQ0201-XY-0001), *China Electronics Technology Group Corporation*, 06/2024–05/2026.

[P2] **Co-Principal Investigator**, "Self-Adaptive Decomposition and Mapping Technique for Network-Level Intent Goals" (Grant No. TC20221114023), *Huawei Technologies Co., Ltd.*, 12/2022–03/2024.

[P3] **Participant**, "Key Technologies for 6G Full-Scenario On-Demand Services-Network Autonomous Control" (Grant No. 2020YFB1807700), *National Key Research and Development Program of China*, 05/2020–04/2025.

[P4] **Participant**, "Distributed Interference Management for Network Utility in Ultra-Dense Heterogeneous Cellular Networks" (Grant No. 61871454), *National Natural Science Foundation of China*, 01/2019–01/2023.

[P5] **Participant**, "Joint Optimization of Opportunistic Routing and Multidimensional Resource for Cognitive Multi-UAV Ad Hoc Networks in Low Altitude Airspace" (Grant No. F2019402206), *Natural Science Foundation of Hebei Province*, 01/2019–12/2021.

HONORS

- **ESI Highly Cited Paper (First Author)**, Jul. 2026.
- **Outstanding Doctoral Student Award**, Xidian University, Nov. 2025.
- **China National Scholarship**, Xidian University, Oct. 2025.
- **Outstanding Master's Thesis Award**, Hebei Province, Jan. 2024.
- **Outstanding Master's Thesis Award**, Hebei University of Engineering, Jun. 2022.

PROFESSIONAL ACTIVITIES

Conference Organizer

- **Workshop Chair**, 1st Workshop on Intent-Driven Autonomous Networking (IDAN), *IEEE IWCMC 2026*, Shanghai, China, Jun. 2026.

Invited Talk in Conference

- Invited Talk “Large Language Model-Enhanced Intent-Driven Management and Orchestration for 6G Networks” at *IEEE VTC2025-Fall*, Chengdu, China, Oct. 2025.
- Invited Talk “Privacy-Aware Wireless Power Transfer for Aerial Computation Offloading via Colonel Blotto Game” at *IEEE GLOBECOM Workshop* on the Wireless and Applications Security, Taipei, China, Dec. 2020.
- Invited Talk “Wireless Power Transfer in Maritime Communication Networks for Spoofing Attack Detection via Colonel Blotto Game” at *Graduate Academic Forum of Guangdong*, Nov. 2021.

Technical Reviewers

- ACM Computing Surveys (CSUR)
- SCIENCE CHINA Information Sciences (SCIS)
- IEEE Transactions on Wireless Communications (TWC)
- IEEE Transactions on Mobile Computing (TMC)
- IEEE Communications Magazine (CM)
- IEEE Network Magazine (Network)
- IEEE Internet of Things Journal (IoT)
- IEEE Open Journal of the Communications Society (OJCOMS)

Technical Program Committee (TPC) Membership

- IEEE VTC2026-Spring
- IEEE ICC 2026 Workshop
- IEEE IWCMC 2026

PUBLICATIONS

- **Textbook**

[T1] C. Yang, T. Feng, X. Mi, T. Li, and **Y. Wang**, *Game Theory for Cognitive Space-Air-Ground Integrated Networks*, Xidian University Press, China, 2024.

- **Edited Book**

[E1] C. Yang, **Y. Wang**, and T. Li, *Intent-Driven Network: Techniques and Applications*, SpringerLink, Germany, 2025.

- **Journal Articles**

[J1] **Y. Wang**, C. Yang, T. Li, X. Mi, L. Li, and Z. Han, “A Survey on Mean-Field Game for Dynamic Management and Control in Space-Air-Ground Network,” *IEEE Communications Surveys & Tutorials*, vol. 26, no. 4, pp. 2798-2835, 4th Quart., 2024.

[J2] **Y. Wang**, C. Yang, T. Li, Y. Ouyang, X. Mi, and Y. Song, “A Survey on Intent-Driven End-to-End 6G Mobile Communication System,” *IEEE Communications Surveys & Tutorials*, vol. 28, pp. 882-915, Feb. 2026. **[ESI Highly Cited Paper]**

[J3] **Y. Wang**, C. Yang, Q. Li, P. Wang, S. Zou, B. Shang, and S. Wang, “LAMIO-6G: Large AI Model-Empowered Cross-Layer Intent Management and Multi-Domain Policy Orchestration in 6G Terrestrial Networks,” *IEEE Transactions on Cognitive Communications and Networking*, vol. 12, pp. 6221-6236, Feb. 2026.

[J4] **Y. Wang**, C. Yang, Y. Yu, Y. Li, D. Li, X. Zhao, and Z. Han, “A Brief Survey and Implementation on Network-Level Intent Decomposition for Telecommunication Networks,” *IEEE Communications Magazine*, vol. 63, no. 7, pp. 178-186, Jul. 2025.

[J5] **Y. Wang**, Y. Yu, Y. Li, D. Li, X. Zhao, and C. Yang, “Network Intent Decomposition and Optimization for Energy-Aware Radio Access Network,” *IEEE Transactions on Vehicular*

Technology, vol. 75, no. 2, pp. 3025-3040, Feb. 2026.

[J6] **Y. Wang**, C. Yang, P. Wang, Q. Li, C. Dou, and T. Q. S. Quek, "Multi-Intent Conflict Coordination and Resolution in 6G RAN: An LLM-Enhanced Cooperative Game-Theoretic Approach," submitted to *IEEE Journal on Selected Areas in Communications*, 2026.

[J7] **Y. Wang**, C. Yang, T. Li, X. Mi, T. Q. S. Quek, and Z. Han, "Intent-Aware Energy Efficient Control in Large-Scale Agentic 6G Networks: An MoE-Enhanced Multi-Population Mean-Field Game Approach," *IEEE Transactions on Wireless Communications*, to be submitted, 2026

[J8] **Y. Wang,** C. Yang, T. Li, X. Mi, T. Q. S. Quek, and Z. Han, "When Agentic AI Meets Game Theory: A New Paradigm for Intent-Driven 6G Networks," *IEEE Wireless Communications*, to be submitted, 2026.

[J9] L. Zhang, **Y. Wang**, M. Min, C. Guo, V. Sharma, and Z. Han, "Privacy-Aware Laser Wireless Power Transfer for Aerial Multi-Access Edge Computing: A Colonel Blotto Game Approach," *IEEE Internet of Things Journal*, vol. 10, no. 7, pp. 5923-5939, Apr. 2023.

[J10] L. Zhang, **Y. Wang**, and Z. Han, "Safeguarding UAV-Enabled Wireless Power Transfer Against Aerial Eavesdropper: A Colonel Blotto Game," *IEEE Wireless Communications Letters*, vol. 11, no. 3, pp. 503-507, Dec. 2021.

[J11] X. Ma, **Y. Wang**, and L. Zhang, "Multipath Stability Routing in Cognitive UAV Swarm for Emergency Communications: A Hypergraph Matching Approach," *Wireless Communications and Mobile Computing*, vol. 1, May 2022, Art no. 6783041.

[J12] T. Li, C. Yang, **Y. Wang**, L. Cai, A. Anpalagan, and Z. Han, "A Survey on Network Management for xANET: Evolution, Challenges, Future Directions," *IEEE Communications Surveys & Tutorials*, vol. 28, pp. 1209-1247, Feb. 2026.

[J13] L. Zhang, S. Zhuge, **Y. Wang**, H. Xu, and E. Sun, "Energy-Delay Tradeoff for Virtual Machine Placement in Virtualized Multi-Access Edge Computing: A Two-Sided Matching Approach," *Journal of Ambient Intelligence and Humanized Computing*, vol. 2021, pp. 1-19, Oct. 2021.

[J14] Z. Wang, C. Yang, S. Mao, **Y. Wang**, Y. Ouyang, and Z. Han, "KIFS: Knowledge-Enhanced Intent-Driven Flow Scheduling Design for LEO Satellite Networks," *IEEE Internet of Things Journal*, early access, Apr. 2026, doi: 10.1109/JIOT.2026.3685626.

[J15] J. Zhang, C. Yang, R. Dong, **Y. Wang**, A. Anpalagan, Q. Ni, and M. Guizani, "Intent-Driven Closed-Loop Control and Management Framework for 6G Open RAN," *IEEE Internet of Things Journal*, vol. 11, no. 4, pp. 6314-6327, Feb. 2024.

[J16] P. Wang, T. Li, C. Yang, F. Li, **Y. Wang**, Q. Li, Z. Chang, B. Shang, and D. Niyato, "LIMO: Large Language Model-Empowered Intent-Driven Network Management and Orchestration," *IEEE Communications Magazine*, early access, Jan. 2026, doi: 10.1109/MCOM.001.2500533.

[J17] T. Li, R. Zheng, C. Yang, F. Li, **Y. Wang**, and S. Liu, "ICRT: Intent-Driven Cross-Domain Routing Design for Task-Oriented Heterogeneous FANETs," *IEEE Transactions on Vehicular Technology*, early access, Feb. 2026, doi: 10.1109/TVT.2026.3666952.

- **Conference Papers**

[C1] **Y. Wang**, C. Yang, Q. Li, P. Wang, and T. Q. S. Quek, "LLM-Enhanced Game-Theoretic Design for Intent Conflict Resolution in Radio Access Networks," *ACM UbiComp/ISWC 2026*, Shanghai, China, Oct. 2026.

[C2] **Y. Wang**, C. Yang, Q. Li, R. Fan, and H. Li, "Large Language Model-Enhanced Intent-Driven Management and Orchestration for 6G Networks," in *Proc. IEEE 102nd Vehicular Technology Conference (VTC2025-Fall)*, Chengdu, China, Oct. 2025.

[C3] **Y. Wang**, L. Zhang, M. Min, C. Guo, V. Sharma, and Z. Han, “Privacy-Aware Wireless Power Transfer for Aerial Computation Offloading via Colonel Blotto Game,” in *Proc. IEEE Global Communications Conference (GLOBECOM)*, Taipei, China, Dec. 2020.

[C4] **Y. Wang**, C. Yang, T. Li, X. Mi, and T. Q. S. Quek, “Intent-Aware Energy Efficient Control in Agentic 6G Networks via MoE-Enhanced Mean-Field Game,” in *Proc. IEEE ICC*, to be submitted, 2026.

[C5] Q. Li, C. Yang, **Y. Wang**, R. Fan, and P. Wang, “Large Language Model-Empowered Intent-Driven Network Configuration Generator,” in *Proc. IEEE 102nd Vehicular Technology Conference (VTC2025-Fall)*, Chengdu, China, Oct. 2025.

[C6] L. Zhang, X. Ma, **Y. Wang**, C. Bai, and H. Xu, “Towards the Effect of Path Stability on Multi-path Routing in Cognitive Radio Ad Hoc Networks: A Markov Predictor Perspective,” in *Proc. International Conference on Wireless Communication and Signal Processing (ICWCSP)*, Hangzhou, China, Jul. 2021.

[C7] Y. Huang, C. Yang, T. Li, Y. Dai, and **Y. Wang**, “Knowledge-Enhanced Large Language Model for Intent Refinement Mechanism,” in *Proc. IEEE 102nd Vehicular Technology Conference (VTC2025-Fall)*, Chengdu, China, Oct. 2025.

[C8] X. Lei, Y. Song, J. Lin, T. Feng, P. Li, **Y. Wang**, and C. Yang, “Resilience In-Band Control Path Routing in Blockchain-Based Multi-Domain SDN,” in *Proc. 2023 International Wireless Communications and Mobile Computing (IWCMC)*, Marrakesh, Morocco, Jun. 2023.

[C9] M. Wu, B. Bai, Y. Ouyang, C. Yang, and **Y. Wang**, “Multi-Satellite Collaboration Task Planning Based on Behavior Tree,” in *Proc. 2025 International Wireless Communications & Mobile Computing Conference (IWCMC)*, Abu Dhabi, UAE, May 2025.