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[个人简历] [所获荣誉] [科研项目] [论文发表] [学术兼职]

个人简历

我于2024年在南京航空航天大学(NUAA)计算机科学与技术学院获得硕士学位。我目前在南京航空航天大学计算机科学与技术学院攻读博士学位, 导师为易畅言教授, 预计2027年下半年毕业。

我的主要研究方向包括数字孪生构建、联邦/分布式系统、博弈论AI智能体设计、基于深度强化学习的在线优化以及物理/虚拟层安全。我已在IEEE TMC, TWC, TVT, TNSE, IOTJ等高水平期刊以及IEEE INFOCOM, ICC, WCNC, WASA等旗舰会议上发表了21篇论文, 并且以学生第一作者出版沈学民院士主编的Springer系列丛书Wireless Networks一本。同时, 我还担任这些期刊和会议的审稿人。

教育与经历

- 博士在读: 2024年春季至今, 南京航空航天大学 (NUAA) 计算机科学与技术学院
- 硕士学位: 2021年秋季至2024年春季, 南京航空航天大学 (NUAA) 计算机科学与技术学院
- 本科生海外学习: 2019年夏季, 美国加州大学洛杉矶分校 (UCLA) 安德森管理学院
- 学士学位: 2017年秋季至2021年夏季, 南京信息工程大学 (NUIST) 计算机学院
- 高中: 2014年秋季至2017年夏季, 南京市金陵中学

所获荣誉

- 南京航空航天大学“引航计划”, 2025-2027, 南京航空航天大学
- 江苏省研究生科研与实践创新计划, 2025-2026, 江苏省教育厅
- 苏州工业园区奖学金, 2024, 苏州工业园区
- 南京航空航天大学研究生科研与实践创新计划, 2023-2024, 南京航空航天大学
- 第十一届研究生国际学术会议优秀论文奖, 2023, 南京航空航天大学
- 南京航空航天大学研究生学业奖学金, 2021-2024, 南京航空航天大学
- 本科生海外学习奖学金, 2019, 江苏省教育厅

参与科研项目

- 2025年江苏省研究生科研与实践创新计划“面向智慧交通应用的边云数字孪生构建策略优化技术研究”, 主持
- 2025年广东省重点研发项目“面向真实场景的多模态交通大模型研发与应用示范”, 技术骨干
- 南京航空航天大学2026年度跨学科创新基金项目(“引航计划”校人才项目), 主持

发表论文和专著情况 (高亮为独立一作/学生一作)

书籍/书籍章节

[B1] Changyan Yi, **Ruoyang Chen**, Jiayuan Chen, Xiaolong Li and Jun Cai, "Self-Evolving Digital Twin over Wireless Networks: Dynamic Twin Construction and Service Interaction", *Wireless Networks Series*, Springer press, 2025. (ISBN: 978-3-032-08120-9)

期刊论文 (* denotes the corresponding author)

[J9] **Ruoyang Chen**, Changyan Yi*, Haifeng Zhu, Wen Wu, Jiawen Kang and Dusit Niyato, "Dynamic Digital Twin Update by Adaptive Model Splitting and Reliable Crowdsourcing under Uncertain Data Distortions", *IEEE Transactions on Mobile Computing*, accepted. (SCI-Q1 TOP, CCF-A)

[J8] Cong Tang, Youwen Zhu*, **Ruoyang Chen**, Changyan Yi and Jian Wang, "GBC-UG: An Advanced Location Data Distribution Estimation Mechanism under Geoinistinguishability", *IEEE Transactions on Mobile Computing*, Accepted. (SCI-Q1 TOP, CCF-C)

[J7] Xiaolong Li, Jianhao Wei, Haidong Wang, Li Dong, **Ruoyang Chen**, Changyan Yi, Jun Cai, Dusit Niyato and Xuemin (Sherman) Shen, "Towards Intelligent Transportation with Pedestrians and Vehicles In-the-Loop: A Surveillance Video-Assisted Federated Digital Twin Framework", *IEEE Network Magazine*, Early Access. (SCI-Q3)

[J6] **Ruoyang Chen**, Changyan Yi*, Fuhui Zhou, Jiawen Kang, Yuan Wu and Dusit Niyato, "Federated Digital Twin Construction via Distributed Sensing: A Game-Theoretic Online Optimization with Overlapping Coalitions", *IEEE Transactions on Mobile Computing*, vol. 24, no. 11, pp. 12221-12238. (SCI-Q1 TOP, CCF-A)

[J5] Zenghui Qian, **Ruoyang Chen**, Changyan Yi*, Xiangping Zhai and Bing Chen, "Collision Avoidance Control for Autonomous Driving with Multiple Dynamic Obstacles in IoV: A Prediction-Enhanced APF-Based Approach", *IEEE Internet of Things Journal*, vol. 12, no. 13, pp. 24968-24984, Jul. 2025. (SCI-Q1 TOP, CCF-C)

[J4] Haipeng Zhou, **Ruoyang Chen**, Changyan Yi*, Jianjun Zhang, Jiawen Kang, Jun Cai and Mohsen Guizani, "A Repeated Coalition Formation Game for Physical Layer Security Aware Wireless Communications with Third-Party Intelligent Reflecting Surfaces", *IEEE Transactions on Wireless Communications*, vol. 24, no. 9, pp. 7612-7626, Sept. 2025. **(SCI-Q1 TOP)**

[J3] Denghui Liu, **Ruoyang Chen**, Changyan Yi*, Tong Zhang, Xiaolong Li, Juan Li, Ran Wang and Kun Zhu, "A Hierarchical Game for Physical Layer Security Aware Cooperative Communications with Dynamic Interchangeable Relaying and Jamming", *IEEE Transactions on Vehicular Technology*, vol. 74, no. 1, pp. 968-983, Jan. 2025. **(SCI-Q2 TOP)**

[J2] **Ruoyang Chen**, Changyan Yi*, Kun Zhu, Bing Chen, Jun Cai and Mohsen Guizani, "A Three-Party Hierarchical Game for Physical Layer Security Aware Wireless Communications with Dynamic Trilateral Coalitions", *IEEE Transactions on Wireless Communications*, vol. 23, no. 5, pp. 4815-4829, May 2024. **(SCI-Q1 TOP)**

[J1] Shanfei Shang, Changyan Yi*, Tong Zhang, **Ruoyang Chen** and Jun Cai, "Latency-Energy Aware Dynamic Application Placement for Edge Computing: A Vacation Queue Based Optimization Approach", *IEEE Transactions on Network Science and Engineering*, vol. 11, no. 2, pp. 2249-2263, Mar.-Apr. 2024. **(SCI-Q2)**

· 会议论文

[C12] **Ruoyang Chen**, Yijie Zhang, Ruizhi Wang and Changyan Yi, "DTAS: Adaptive Model Splitting for Dynamic Digital Twin Update with Edge Cloud Collaboration," *IEEE International Conference on Computer Communications (INFOCOM)*, Tokyo, Japan, May 18-21, 2026. **(CCF-A)**

[C11] You Shi, Yuye Yang, **Ruoyang Chen** and Chen Dai, "Quality-Aware Online Optimization for Reliability Guaranteed Microservice Deployment for Edge Computing Enabled Industrial IoT," *International Conference on Wireless Communications and Signal Processing (WCSP)*, Chongqing, China, Oct. 23-25, 2025. **(EI)**

[C10] You Shi, Yuye Yang, **Ruoyang Chen**, Chen Dai and Jiantao Shi, "Reliability-Aware Online Learning for Layer-Sharing-Based Digital Twin Deployment in Multi-Edge Systems," *IEEE Vehicular Technology Conference Workshops (VTC WKSHPs)*, Chengdu, China, Oct. 19-22, 2025. **(EI)**

[C9] Xinyu Yu, Yuye Yang, **Ruoyang Chen** and Changyan Yi, "Online Optimization of Edge Vehicle Digital Twin Migration with Adaptive Mobility Prediction," *IEEE Vehicular Technology Conference (VTC)*, Chengdu, China, Oct. 19-22, 2025. **(EI)**

[C8] Tianqing Man, Haifeng Zhu, **Ruoyang Chen** and Changyan Yi, "Hierarchical DRL-Based Multi-Motor Control with Torque Synchronization in Industrial IoT," *International Conference on Wireless Artificial Intelligent Computing Systems and Applications (WASA)*, Tokyo, Japan, Jun. 24-26, 2025. **(CCF-C)**

[C7] Junjie Wu, **Ruoyang Chen** and Changyan Yi, "A DRL-Based Deviation-Aware Federated Digital Twin Construction over Wireless Edge Network," *International Conference on Wireless Artificial Intelligent Computing Systems and Applications (WASA)*, Tokyo, Japan, Jun. 24-26, 2025. **(CCF-C)**

[C6] **Ruoyang Chen** and Changyan Yi, "A Game-Theoretic Online Optimization for Federated Digital Twin Construction via Wireless Sensing," *IEEE International Conference on Communications (ICC)*, Montreal, Canada, Jun. 8-12, 2025. **(CCF-C)**

[C5] Yuye Yang, You Shi, **Ruoyang Chen**, Changyan Yi and Jiawen Kang, "Online Optimization of Edge Empowered Human Digital Twin Deployment and Task Offloading," *IEEE/CIC International Conference on Communications in China (ICCC)*, Hangzhou, China, Aug. 7-9, 2024. **(EI)**

[C4] Denghui Liu, **Ruoyang Chen**, Tong Zhang and Changyan Yi, "A DRL-Based Hierarchical Game for Physical Layer Security Aware Cooperative Communications," *IEEE/CIC International Conference on Communications in China (ICCC)*, Hangzhou, China, Aug. 7-9, 2024. **(EI)**

[C3] Haipeng Zhou, **Ruoyang Chen**, Changyan Yi, Juan Li and Jun Cai, "A Three-Party Repeated Coalition Formation Game for PLS in Wireless Communications with IRSs," *IEEE Wireless Communications and Networking Conference (WCNC)*, Dubai, UAE, Apr. 21-24, 2024. **(CCF-C)**

[C2] Wenjie Zhu, **Ruoyang Chen**, Changyan Yi and Jun Cai, "Edge-Assisted Video Transmission with Adaptive Key Frame Selection: A Hierarchical DRL Approach," *Biennial Symposium on Communications (BSC)*, Montreal, Canada, Jul. 4-Jul. 7, 2023. **(EI)**

[C1] **Ruoyang Chen**, Changyan Yi, Kun Zhu, Bing Chen and Jun Cai, "A DRL-Based Hierarchical Game for Physical Layer Security with Dynamic Trilateral Coalitions," *IEEE International Conference on Communications (ICC)*, Rome, Italy, May 28-Jun. 1, 2023. **(CCF-C)**

· 发明专利

[P3] 陈若阳, 易畅言, 朱琨, 陈兵, “基于动态联盟博弈的物理层安全无线传输中三方设备智能决策方法” (授权号: CN116405942B, 已授权)

[P2] 陈若阳, 易畅言, 李小龙, 吴俊杰, “基于动态分层博弈的边云协同联邦数字孪生模型构建方法” (申请号: 202510365391.5, 已公开)

[P1] 易畅言, 刘登辉, 陈若阳, “面向物理层安全感知协作通信的动态分层联盟博弈方法” (公开号:CN118041664A, 已公开)

学术兼职

· 审稿人

- IEEE Transactions on Mobile Computing
- IEEE Transactions on Dependable and Secure Computing
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Consumer Electronics
- IEEE Transactions on Transportation Electrification
- IEEE Transactions on Network and Service Management
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Industry Applications
- IEEE Internet of Things Journal
- IEEE Network Magazine
- IEEE Wireless Communication Magazine
- IEEE Industry Applications Magazine
- IEEE Sensor Letter
- IEEE Access
- Computer Animation and Virtual Worlds
- Engineering Science and Technology
- Sustainable Energy, Grids and Networks
- Journal of Systems Architecture
- Journal of Renewable and Sustainable Energy
- Electronics
- PLOS One
- CMC-Computers, Materials & Continua
- Scientific Reports
- Applied Soft Computing Journal
- Advances in Differential Equations and Control Processes
- Journal of Game Studies
- Contemporary Mathematics
- Journal of King Saud University Computer and Information Sciences

— International Journal of Production Economics
— The Journal of Supercomputing

— Digital Transportation and Safety
— IEEE ICC, IEEE WCNC, IEEE VTC, IEEE GLOBECOM, WASA, etc.

• 分会主席

— ICIVIS 2025, Workshop 11
