Dr. Jingwen Tong

Postdoctoral Fellow
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Work Experience

Postdoctoral Fellow Jun. 2022 - Nov. 2024
Department of Electronic and Computer Engineering
The Hong Kong University of Science and Technology (HKUST)
Research Supervisors: Prof. Jun Zhang and Prof. Khaled B. Letaief

Visiting Scholar Oct. 2019 - Nov. 2020
Department of Electrical and Computer Engineering
University of Houston, Houston, USA
Research Supervisor: Prof. Zhu Han

Biography

Ph.D. Degree, Communication and Information System Sep. 2018 - Jun. 2022
Xiamen University, Xiamen, China
Research Supervisor: Prof. Liqun Fu

M.Phil. Degree, Communication and Information System Sep. 2015 - Jun. 2018
Ningbo University, Ningbo, China
Research Supervisor: Prof. Ming Jin

B.Eng. Degree, Communication Engineering Sep. 2011 - Jun. 2015
China Jiliang University, Hangzhou, China

Submitted Paper

1. **Jingwen Tong**, Jiawei Shao, Qiong Wu, Wei Guo, Zijian Li, Zehong Lin, and Jun Zhang. WirelessAgent: Large Language Model Agents for Intelligent Wireless Networks [J], *IEEE Network*, 2024. (Submitted)

2. Boyi Liu, **Jingwen Tong**, and Jun Zhang. LLM-Slice: Dedicated 5G Wireless Network Slicing for Large Language Models, *ACM Conference on Embedded Networked Sensor Systems (SenSys)*, Hangzhou, 2024.(Accepted)

3. Shumin Lian, **Jingwen Tong**, and Liqun Fu. Dynamic Channel Allocation via Bandit Leaning for Wi-Fi 7 Networks with Multi-Link Operation [C], *WCNC*, Milan, 2025. (Submitted)

4. Boyi Liu, **Jingwen Tong**, Yufan Zhuang, Jiawei Shao, and Jun Zhang. EdgeLoc: A Communication-Adaptive Parallel System for Real-Time Localization in Infrastructure-Assisted Autonomous Driving [J], *arXiv:2405.12120*, arXiv, 2024.

Journals

1. **Jingwen Tong**, Xinran Li, Liqun Fu, Jun Zhang, and Khaled Letaief. A Federated Online Restless Bandit Framework for Cooperative Resource Allocation [J], *IEEE Transactions on Mobile Computing*, DOI: 10.1109/TMC.2024.3453250, 2024.

2. **Jingwen Tong**, Zhenzhen Chen, Liqun Fu, Jun Zhang, and Zhu Han. From Learning to Analytics: Improving Model Efficacy with Goal-Directed Client Selection [J], *IEEE Transactions on Mobile Computing*, Doi: 10.1109/TMC.2024.3383038, 2024.

3. **Jingwen Tong**, Liqun Fu, Yizhe Wang, and Zhu Han. Model-Based Thompson Sampling for Frequency and Rate Selection in Underwater Acoustic Communications [J], *IEEE Transactions on Wireless Communications*, Vol. 22, No. 10, pp. 6846-6961, Oct. 2023.

4. **Jingwen Tong**, Liqun Fu, and Zhu Han. Age-of-Information Oriented Scheduling for Multi-Channel IoT Systems with Correlated Sources [J], *IEEE Transactions on Wireless Communications*, vol. 21, no. 11, pp. 9775-9790, Jun. 2022.

5. **Jingwen Tong**, Hongliang Zhang, Liqun Fu, Amir Leshem, and Zhu Han. Two-Stage Resource Allocation in Reconfigurable Intelligent Surface Assisted Hybrid Networks via Multi-Player Bandits [J], *IEEE Transactions on Communications*, vol. 70, no. 5, pp. 3526-3541, May 2022.

6. **Jingwen Tong**, Liqun Fu, and Zhu Han. Throughput Enhancement of Full-Duplex CSMA Networks Using Multi-Player Bandits [J], *IEEE Internet of Things Journal*, vol. 15, no. 8, pp. 11807-11821, Mar. 2021.

7. **Jingwen Tong**, Ming Jin, Qinghua Guo, and Youming Li. Cooperative Spectrum Sensing: A Blind and Soft Fusing Detector [J], *IEEE Transactions on Wireless Communications*, vol. 17, no. 4, pp. 2726-2737, Apr. 2018.

8. **Jingwen Tong**, Ming Jin, Qinghua Guo, and Long Qu. Energy Detection under Interference Power Uncertainty [J], *IEEE Communications Letters*, vol. 21, no. 8, pp. 1887-1890, Aug. 2017.

9. Jiawei Shao, **Jingwen Tong**, Qiong Wu, Wei Guo, Zijian Li, Zehong Lin, and Jun Zhang. WirelessLLM: Empowering Large Language Models Towards Wireless Intelligence [J], *Journal of Communications and Information Networks*, 2024.

10. Liqun Fu, **Jingwen Tong**, Tongtong Lin, and Jun Zhang. Online Resource Allocation for User Experience Improvement in Mobile Edge Clouds [J], *IEEE Transactions on Wireless Communications*, doi: 10.1109/TWC.2024.3403996, 2024.

11. Minghui Min, Haopeng Zhu, Shuang Yang, Junhuai Xu, **Jingwen Tong**, and Jiangang Shu. Geo-Perturbation for Task Allocation in 3D Mobile Crowdsourcing: An A3C-based Approach [J]. *IEEE Internet of Things Journal*, Vol. 11, No. 2, pp. 1854-1865, Oct. 2023.

Conferences

1. **Jingwen Tong**, Shuyue Lai, Liqun Fu, and Zhu Han. Optimal Frequency and Rate Selection Using Unimodal Objective Based Thompson Sampling Algorithm [C], *IEEE International Conference on Communications (ICC)*, 2020, Jun. 7, Dublin, Ireland.

2. **Jingwen Tong**, Liqun Fu, and Zhu Han. Throughput Enhancement of Full-Duplex CSMA Networks via Adversarial Multi-Player Multi-Armed Bandit [C], *IEEE Global Communications Conference (GLOBECOM)*, 2019, Dec. 9, Waikoloa, HI, USA.

3. Weiya Ni, **Jingwen Tong**, and Liqun Fu. Online Resource Allocation for User Experience Improvement in Heterogeneous MEC Systems [C], *IEEE Global Communications Conference (GLOBECOM)*, 2024.

4. Zhenzhen Chen, **Jingwen Tong**, Liqun Fu, and Zhu Han. Over-the-Air Computing Aided Federated Learning and Analytics via Belief Propagation Based Stochastic Bandits [C], *IEEE International Conference on Communications (ICC)*, 2022, May, Seoul, Korea.

Patents

1. 岳蕾, 赖舒悦, 童景文, 付立群. 一种提升水声通信链路平均吞吐量的方法 [P]. 福建省: CN111431628B, 2021-07-06.
2. 付立群, 童景文, 岳蕾. 一种利用 MAB 提升全双工 CSMA 网络吞吐量的方法 [P]. 福建省: CN110233762B, 2021-03-09.
3. 童景文, 金明, 姚俊腾. 针对时间同步且不存在频偏情况下的 OFDM 信号频谱感知方法 [P]. 浙江省: CN107196720B, 2020-08-14.
4. 姚俊腾, 金明, 童景文. 针对时间同步且存在频偏情况下的 OFDM 信号频谱感知方法 [P]. 浙江省: CN107465473B, 2020-07-03.
5. 童景文, 金明. 一种基于软融合策略的盲协作频谱感知方法 [P]. 浙江省: CN107770778B, 2020-01-21.
6. 付彩梅, 李有明, 童景文, 余明宸, 周桂莉. 一种基于比特交换的多用户电力线通信系统资源分配方法 [P]. 浙江省: CN105656612B, 2018-06-26.
7. 童景文, 金明. 一种基于贝叶斯准则和能量检测法的频谱感知方法 [P]. 浙江: CN106788817A, 2017-05-31.

Research Interests

- Multi-Armed Bandit (MAB)
- Resource Allocation in Wireless Communications
- Security and Privacy for Generated AI
- Foundation Model for Wireless Communications

Service

Conference Organizer:

- IEEE/CIC International Conference on Communications in China (ICCC), Session chair, Xiamen, Jul. 2021
- Huawei-HKUST Joint Workshop on Theory for Future Wireless, Organization Co-chairs, Hong Kong, Sept. 2022
- IEEE Hong Kong 6G Wireless Summit (HK6GWS), Webmaster Chair, Hong Kong, Sept. 2023
- IEEE Hong Kong 6G Wireless Summit (HK6GWS), Webmaster Chairs, Hong Kong, Sept. 2024

Technical Program Committee:

- IEEE Global Telecommunications Conference (Globecom), 2023
- IEEE Wireless Communications and Networking Conference (WCNC Workshop WS-15), 2024
- IEEE International Conference on Communications (ICC Workshop WS06), 2024
- IEEE Global Telecommunications Conference (Globecom), 2024

Review for:

- IEEE Transaction on Wireless Communications
- IEEE Transaction on Communications
- IEEE Transaction on Vehicular Technology
- IEEE Transaction on Cognitive Communications and Networking
- IEEE Communications Magazine
- IEEE Transactions on Mobile Computing
- IEEE Journal on Selected Areas in Communications
- IEEE Communications Letters
- IEEE Wireless Communications Letters
- Journal of Communications and Information Networks
- Conferences: ICC, GLOBECOM, INFOCOM, VTC, WCNC

Awards and Honors

Excellent doctoral dissertation, Xiamen University *2022*
Outstanding Graduate, Xiamen University *2022*
Wande Scholarship, Xiamen University *2022*
IEEE ComSoc Student Travel Grant, IEEE ComSoc *2020*
The Chinese Government Scholarship, China Scholarship Council *2019*
First-class Scholarship, Ningbo University *2018*
Outstanding Graduate, Ningbo University *2018*
Ningbo Graduate Academic Festival, Gold Award, Ningbo City *2017*
National Graduate Mathematical Contest in Modeling, Second Prize, Ministry of Education *2017*
National Graduate Mathematical Contest in Modeling, Second Prize, Ministry of Education *2016*
National Inspirational Scholarship (2/80), Chinese Government *2013*
National Undergraduate Electronic Design Competition, Second Prize, Ministry of Education *2013*