

Jingqi Fan

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EDUCATION

- **Northeastern University** Sep. 2022 – Jul. 2026
B.Eng. in Software Engineering Shenyang, China
 - GPA: 3.7/4.0
 - Selected courses: Algorithm Design and Analysis (4.0/4.0), Numerical Analysis (4.0/4.0), Information Retrieval Theory (4.0/4.0), Data Structures and Algorithms (4.0/4.0), Computer Networks (4.0/4.0), Principles of Computer Organization (3.7/4.0), Operating System (4.0/4.0), Python Data Analysis (4.0/4.0), C++ Programming (4.0/4.0), Database (4.0/4.0), Software Project Management (4.0/4.0)

RESEARCH INTERESTS

Online Decision Making, Multi-agent Systems, Operations Research, Reinforcement Learning.

PUBLICATIONS

[†]=CORRESPONDING AUTHOR

- [1] **Jingqi Fan**, Zilong Wang, Shuai Li[†], and Linghe Kong. **Multi-player Multi-armed Bandits with Delayed Feedback**. In the 34th International Joint Conference on Artificial Intelligence (IJCAI 2025). <https://www.ijcai.org/proceedings/2025/0564.pdf>
- [2] **Jingqi Fan**, Canzhe Zhao, Shuai Li, and Siwei Wang[†]. **Decentralized Asynchronous Multi-player Bandits**. In the 25th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2026), Extended Abstract. <https://arxiv.org/abs/2509.25824>.
- [3] **Jingqi Fan**, Jingyuan Wang, Yuxuan Han, Yunteng Xu, Zhuofan Xi, and Zhengyuan Zhou[†]. **QuRL: A Fast GPU-Accelerated Reinforcement Learning Framework for Large-Scale Queuing Networks**. Manuscript in preparation.

RESEARCH EXPERIENCE

- **Differentiable Simulation of Large-Scale Queueing Networks for RL** Jul. 2025 – Present
Research Assistant, NYU Stern School of Business New York, USA
Advisor: Prof. [Zhengyuan Zhou](#)
 - Architected a differentiable discrete-event simulator for large-scale dynamic queueing networks, establishing a theoretical and engineering framework for gradient-based policy optimization.
 - Engineered an end-to-end GPU-accelerated pipeline using **TorchRL**, eliminating the CPU-CUDA data transfer bottlenecks inherent in standard Gym environments.
 - Implemented classical scheduling rules ($c\mu$, MaxWeight) and RL algorithms (DQN, PPO variants).
 - Scaled to complex topologies (200 × 200 servers) and achieved a **44%–97% speedup** compared to baselines.
- **Delayed Feedback in Multi-Player Bandits** Aug. 2023 – Sep. 2024
Research Assistant, Shanghai Jiao Tong University Shanghai, China
Advisor: Prof. [Shuai Li](#)
 - Proposed a novel decentralized algorithm to address the limitations of existing methods relying on synchronization. Solved the challenge of **asynchronous delayed feedback** in cognitive radio networks by designing a mechanism where agents maintain consistent estimates without explicit communication.
 - Established theoretical guarantees by deriving both **regret upper bound** and **lower bound**, proving the algorithm's **near-optimality**.
 - Validated performance through numerical simulations and experiments on a **real-world cognitive radio dataset**, showing significant improvements over synchronous baselines.
- **Reinforcement Learning Monograph: Online Learning** Jan. 2025 – Mar. 2025
Research Assistant, Shanghai Jiao Tong University Shanghai, China
Advisor: Prof. [Weinan Zhang](#)
 - Authored the core chapter "Online Learning and Exploration–Exploitation Trade-off" for an RL textbook funded by a national reform project [\[PDF\]](#).
 - Developed a companion code repository with standard implementations of all discussed algorithms (ETC, ϵ -greedy, UCB, Elimination, Thompson Sampling) to ensure reproducibility [\[code\]](#).

INTERNSHIP

- **Decentralized Asynchronous Multi-player Bandits** Dec. 2024 – Apr. 2025
Research Intern, **Microsoft Research Asia** Beijing, China
Mentor: Dr. [Siwei Wang](#)
 - Proposed a decentralized algorithm for multi-player bandits that supports **dynamic player participation**, allowing agents to join and leave the system at **arbitrary times**.
 - Established theoretical guarantees by proving **regret upper bounds** for this non-stationary setting with heterogeneous reward structures.
 - Validated the algorithm through **large-scale simulations** up to 100 arms. Simulated **IoT network** environments to further evaluate its effectiveness.
- **Collaborative LLM Agents for Personalized Stock Alerts** Mar. 2025 – Jul. 2025
Research Intern, **LINLONG Technology** Shenyang, China
Mentor: Dr. [Jun Na](#)
 - Architected an **LLM agent** system for automated stock reporting by integrating **AkShare** for real-time data and **RAG** for market news retrieval, achieving a pipeline from data ingestion to report generation.
 - Developed adaptive content strategies by modeling user financial literacy through multi-turn dialogue analysis. Dynamically calibrated the LLM's linguistic style to align with user cognition.
 - Engineered a **PPO**-based decision policy to optimize push notification timing based on market volatility sensitivity. Utilized user click-through feedback as reward signals, significantly boosting engagement rates.

TEACHING EXPERIENCE

- **Teaching Assistant on Algorithms Design and Analysis** Spring 2024
 - Provided advice for lab design and development.
 - Facilitated international student communication and provided technical support for equipment setup.
- **Teaching Assistant on Software Architecture and Design Patterns** Fall 2023
 - Assisted with classroom setup, including screen projection and audio equipment.
 - Coordinated with students to support course activities and communication.

SERVICE

- **Reviewer**, AISTATS 2026.
- **Student Volunteer**, IJCAI 2025.

SKILLS

- **Programming Languages:** Python, Java, C++, SQL, JavaScript, TypeScript, Swift.
- **Machine Learning:** PyTorch, NumPy, Pandas, Gymnasium, TorchRL, Transformers, vLLM.
- **Web Development:** Spring Boot, SpringAI, Vue 2&3, Kafka, Redis, MyBatis-Plus, MinIO.
- **Tools & Platforms:** Git, Linux, Docker, Slurm, Jupyter Notebook, LaTeX.