

# Jingqi Fan

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## EDUCATION

### • Northeastern University

Sep. 2022 – Jul. 2026

B.Eng. in Software Engineering

Shenyang, China

◦ GPA: 3.67/4.00 TOEFL: 96/120

◦ 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).

## RESEARCH INTERESTS

Reinforcement Learning Theory, Multi-Armed Bandits, Online Learning, Operations Management.

## PUBLICATIONS

<sup>†</sup>=CORRESPONDING AUTHOR

- [1] Jingqi Fan, Zilong Wang, Shuai Li<sup>†</sup>, and Linghe Kong. **Multi-player Multi-armed Bandits with Delayed Feedback**. In The 34th International Joint Conference on Artificial Intelligence (IJCAI 2025). [PDF] [OpenReview] .
- [2] Jingqi Fan, Canzhe Zhao, Shuai Li, and Siwei Wang<sup>†</sup>. **Decentralized Asynchronous Multi-player Bandits**. Under review. [Arxiv].

## 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

- Built a fully tensorized, differentiable discrete-event simulation of large-scale queueing networks with TorchRL, removing the bottleneck of NumPy–Torch conversions in Stable-Baselines.
- Implemented and evaluated both classical scheduling policies ( $c\mu$ -rule, MaxWeight, MaxPressure, Fluid) and RL algorithms (PPO, Conservative PPO, PPO with behavior cloning).

### • Chapter 3 of RL Monograph: Online learning and Exploration-Exploitation Trade-off

Jan. 2025 – Mar. 2025

Research Assistant, Shanghai Jiao Tong University

Shanghai, China

Advisor: Prof. Weinan Zhang

- Contributed to a nationally funded reinforcement learning monograph under the 101 Reform Project; authored the chapter “Online Learning and Exploration–Exploitation Trade-off”.
- Provided theoretical analyses and code implementations of multiple online learning algorithms ( $\epsilon$ -greedy, ETC, UCB, elimination, Thompson Sampling). Open-sourced the [code] and the [PDF].

### • Asynchronous Feedback in Competitive Multi-Player Multi-Armed Bandits

Aug. 2023 – Sep. 2024

Research Assistant, Shanghai Jiao Tong University

Shanghai, China

Advisor: Prof. Shuai Li

- Designed algorithms for competitive multi-player multi-armed bandits with delayed feedback and collisions. Established regret upper and lower bounds showing near-optimality.
- Validated the algorithms through numerical simulations and real-world experiments, demonstrating significant improvements over standard baselines. The related paper has been published in IJCAI 2025.

## INTERNSHIP

### • Decentralized Asynchronous Multi-player Multi-armed Bandits

Dec. 2024 – Apr. 2025

Research Intern, Theory Center, Microsoft Research Asia

Beijing, China

Mentor: Dr. Siwei Wang

- Proposed a decentralized algorithm for competitive multi-player bandits when players join and leave at arbitrary times, while also being robust to heterogeneous reward structures.
- Validated the algorithm through large-scale simulations up to 100 arms. Simulated IoT network environments to further evaluate its effectiveness. The related paper is under review [Arxiv].

### • Collaborative LLM Agents for Personalized Stock Alerts and Recommendations

Mar. 2025 – Jul. 2025

Research Intern, Financial Algorithm Industry Research Institute, Shenyang Linglong Technology Co., Ltd.

Shenyang, China

Mentor: Prof. Jun Na & Prof. Bin Zhang

- Designed a collaborative multi-agent LLM system that generates dynamic stock reports (morning, midday, and closing) by retrieving data, performing retrieval-augmented generation, and integrating stock analysis tools.
- Implemented PPO-based algorithms to optimize the timing of report delivery, ensuring relevance and timeliness.
- Developed user modeling methods to infer interests and financial literacy from historical dialogues, enabling personalized recommendations and adaptive report styles.