



# Mingtao Ji

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## Biography

I am pursuing a PhD degree under the supervision of Professor Zhuzhong Qian and Professor Baoliu Ye at Nanjing University. Currently, 7 first-author papers have been published or accepted. My research interests include Edge AI, Computing Power Network (CPN), P4 Switch, and Federated Learning (FL).

## Education

### Ph.D. in Distributed Computing Lab., Department of Computer Science and Technology

ADVISOR: PROF. ZHUZHONG QIAN AND PROF. BAOLIU YE. NANJING, JIANGSU, CHINA

- Win the Best Paper Award in BigCom 2023

Nanjing University

Sept. 2021 - Now

### Master's Degree in Department of Computer Science and Technology

ADVISOR: PROF. ZHUZHONG QIAN. NANJING, JIANGSU, CHINA

- Get a First Prize Graduate Scholarship in NJU

Nanjing University

Sept. 2018 - Jun. 2021

### B.S. in College of Computer Science and Technology

ADVISOR: ASSOCIATE PROF. XIN LI AND ASSOCIATE PROF. HAIYAN CHEN. NANJING, JIANGSU, CHINA

- Rank 3st in Qualification Examination for Undergraduate Students (3/120)

Nanjing University of Aeronautics  
and Astronautics

Sept. 2014 - Jun. 2018

## Honors & Awards

### 2021-Now

2024	<b>Outstanding Postgraduates of Nanjing University</b> , Nanjing University	Nanjing, China
2024	<b>First Prize of Scholarship for Talents</b> , Nanjing University Scholarship	Nanjing, China
2023	<b>Best Paper Award</b> , The 7th International Conference on Big Data Computing and Communications	Hainan, China
2022	<b>Graduate First Class Scholarship</b> , Annual Awards	Nanjing, China
2022	<b>The Excellent Prize</b> , Intel 2022 P4 China Hackathon	Beijing, China
2021	<b>Outstanding Student Cadre of Nanjing University</b> , Annual Awards	Nanjing, China

### 2014-2021

2018	<b>Postgraduate Qualification without Entrance Examination</b> , Undergraduate Evaluation	Nanjing, China
2017	<b>National Inspirational Scholarship</b> , Annual Awards	Nanjing, China
2015	<b>Top 100 Young Students in NUAA</b> , May Fourth Excellent Evaluation	Nanjing, China

## Publications

### CONFERENCE

2024	<b>[C.8] Mingtao Ji</b> , Lei Jiao, Yitao Fan, Yang Chen, Zhuzhong Qian, Ji Qi, Gangyi Luo, Baoliu Ye. Online Scheduling of Federated Learning with In-Network Aggregation and Flow Routing. <b>IEEE SECON</b> .	CCF-B
2023	<b>[C.7] Mingtao Ji</b> , Zhuzhong Qian, Baoliu Ye. When CPN Meets AI: Resource Provisioning for Inference Query Upon Computing Power Network. <b>IEEE ICPADS</b> .	CCF-C
	<b>[C.6]</b> Yitao Fan, <b>Mingtao Ji</b> , Zhuzhong Qian. Accelerating Federated Learning With Adaptive Extra Local Updates Upon Edge Networks. <b>IEEE ICPADS</b> .	CCF-C
	<b>[C.5] Mingtao Ji</b> , Chenwei Su, Yuting Yan, Zhuzhong Qian, Yu Chen, Yibo Jin, Sheng Zhang, Baoliu Ye. INTView: Adaptive Planner for In-Band Network Telemetry without Detours. <b>IEEE ICC</b> .	CCF-C
	<b>[C.4] Mingtao Ji</b> , Mingxian Zhou, Haodong Zou, Ming Tang, Zhuzhong Qian, Xiaoliang Wang. SAC: Dynamic Caching upon Sketch for In-Memory Big Data Analytics. <b>BigCom</b> .	

- 2019 [C.3] Yu Chen, Sheng Zhang, Yuting Yan, Zhuzhong Qian, Yibo Jin, Ning Chen, **Mingtao Ji**, Mingjun Xiao. Crowd2: Multi-agent Bandit-based Dispatch for Video Analytics upon Crowdsourcing. **IEEE INFOCOM**. CCF-A
- [C.2] Zhuzhong Qian, Yuan Gao, **Mingtao Ji**, Hui Peng, Peng Chen, Yibo Jin, Sanglu Lu. Workload-Aware Scheduling for Data Analytics upon Heterogeneous Storage. **IEEE ISPA**. CCF-C
- [C.1] Yefei Li, Yibo Jin, Haiyang Chen, Wenchao Xi, **Mingtao Ji**, Sheng Zhang, Zhuzhong Qian, Sanglu Lu. Run Data Run! Re-Distributing Data via Piggybacking for Geo-Distributed Data Analytics. **IEEE ISPA**. CCF-C

## JOURNAL

- 2024 [J.5] **Mingtao Ji**, Ji Qi, Lei Jiao, Gangyi Luo, Hehan Zhao, Xin Li, Baoliu Ye, Zhuzhong Qian. CPN Meets Learning: Online Scheduling for Inference Service in Computing Power Network. **Elsevier Computer Networks**. CCF-B
- [J.4] **Mingtao Ji**, Yibo Jin, Zhuzhong Qian, Tuo Cao, Baoliu Ye. Orchestrating In-network Aggregation for Distributed Machine Learning via In-band Network Telemetry. **Journal of Computer Science and Technology**. CCF-B
- [J.3] **Mingtao Ji**, Chenwei Su, Yitao Fan, Zhuzhong Qian, Yuting Yan, Yibo Jin, Tuo Cao, Yu Chen, Sheng Zhang, Baoliu Ye. INTaaS: Provisioning In-band Network Telemetry as a Service via Online Learning. **Elsevier Computer Networks**. CCF-B
- [J.2] Tuo Cao, Qinhui Wang, Yuhan Zhang, Zhuzhong Qian, Yue Zeng, **Mingtao Ji**, Hesheng Sun, Baoliu Ye. Walking on Two Legs: Joint Service Placement and Computation Configuration for Provisioning Containerized Services at Edges. **Computer Networks**. CCF-B
- 2023 [J.1] Yibo Jin, Lei Jiao, **Mingtao Ji**, Zhuzhong Qian, Sheng Zhang, Ning Chen, Sanglu Lu. Scheduling In-Band Network Telemetry with Convergence-Preserving Federated Learning. **IEEE TON**. CCF-A

## POSTER

- 2023 [R.2] **Mingtao Ji**, Zhixin Zhang, Yuhan Zhang, Zhuzhong Qian, Tuo Cao, Baoliu Ye. Incentivizing Edge Inference with Accuracy Preserving via Online Randomized Auctions. **IEEE SECON Poster**. CCF-B Poster
- [R.1] **Mingtao Ji**, Chenwei Su, Yuting Yan, Zhuzhong Qian, Sheng Zhang, Yu Chen, Tuo Cao, Xiaohang Shi, Luis Vasquez, Baoliu Ye. INTView: Adaptive Planner for In-Band Network Telemetry without Detours. **IEEE/ACM IWQOS Poster**. CCF-B Poster

## PATENT

- 2023 [P.2] **Ji Mingtao** (first student inventor), Qian Zhuzhong. Deployment methods, devices, and systems for intelligent monitoring application tasks in cloud data centers (CN116032778A, 2023/06/06) .
- 2022 [P.1] **Ji Mingtao**, Qian Zhuzhong, Wei Lei, Miao Weiwei, Zeng Zeng. A Cloud Oriented Inband Computing Deployment Method, Device, and System (CN114124732A, 2022/11/25) .

## OTHERS

- 2023 [O.1] **Ji Mingtao**. Two papers are under review and one paper is in Major Revision .

## Grants

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- 2023 **Short-term study abroad program for doctoral students of Nanjing University**, (About \$9600).

## Experiences

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### PROJECTS

#### Natural Science Foundation of China (NSFC) Project

- Research on Theory, Methods and Key Technologies of Cloud based Fusion Based on edge computing, 61832005.

#### State Grid Technology Project

- Research and Application of Key Technologies for Collaborative Operation and Intelligent Operation and Maintenance of Multiple Data Centers for Multisite Fusion, SGJSXT00XTJS2000102, 2021-2022
- Research on Collaborative Scheduling Allocation of Computing Resources and Key Operation Technology for Cloud-edge Datacenters, 5700-202218180A-1-1-ZN, 2022-2024.

### SERVICES

#### Journal/Conference Reviewer

- INFOCOM'20/21/22, JCST'21, TMC'21, INFOCOM'21, CN'22, MASS'22, INFOCOM'22, INFOCOM'23, ToN'23/24, IWQoS'24.

## Course Assistant

- Distributed Systems 22, 23: Lectured by Prof. Zhuzhong Qian.
- Computational Thinking 21, 22, 23: Lectured by Prof. Daoxu Chen, Prof. Xianping Tao, Prof. Zhuzhong Qian.
- Problem Solving 21: Lectured by Prof. Daoxu Chen, Prof. Sanglu Lu, Prof. Sheng Zhang.

## Skills

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<b>Programming</b>	Python, LaTeX, C, C++
<b>System</b>	Linux, Kubernetes, Git, Hadoop
<b>Language</b>	Chinese (Native), English (CET-6)