

Ruilong Zhang

Postdoc

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RESEARCH INTEREST

I am broadly interested in algorithm design and analysis. More specifically, I aim to design polynomial-time algorithms with worst-case guarantees under different computational models: offline, online, computational economics, machine learning, and artificial intelligent. The problems that I studied mainly include scheduling problems and algorithmic fairness problems. Currently, I am very interested in strengthening traditional worst-case algorithms with machine-learned predictions and fair division for public goods.

EMPLOYMENT

- **University at Buffalo** Buffalo, U.S.
Postdoc, advised by [Shi Li](#) Dec. 2022 – present
- **City University of Hong Kong** Hong Kong, China
Postdoc, advised by [Minming Li](#) Oct. 2022 – Nov. 2022

EDUCATION

- **City University of Hong Kong** Hong Kong, China
Ph.D. in Computer Science, supervised by [Minming Li](#) Sept. 2018 – Sept. 2022
Thesis: Scheduling with Calibrations, Fairness and Prediction Advice.
Thesis Committee: [Minming Li](#), [Shuaicheng Li](#), [Jianping Wang](#), [Kurt Mehlhorn](#)
- **Hefei University of Technology** Hefei, China
B.S. in Computer Science Sept. 2014 – Jun. 2018

VISITING

- **University of Macau** Macau, China
Visiting student, advised by [Xiaowei Wu](#) May. 2022 – Aug. 2022
- **Carnegie Mellon University** Pittsburgh, U.S.
Visiting student, advised by [Ben Moseley](#), [Sungjin Im](#) Sept. 2021 – Apr. 2022
- **Universität Hamburg** Hamburg, Germany
Visiting student, advised by [Peter Kling](#) Jun. – Jul. 2019

TEACHING

- **CS4335: Algorithm Design and Analyze** Teaching Assistant
Under-graduated level, City University of Hong Kong Fall 2019, Fall 2020
- **CS2303: Data Structure for Media** Teaching Assistant
Under-graduated level, City University of Hong Kong Spring 2021

AWARD

- AAMAS scholarship 2021.
- Provincial Excellent Graduate (Top 4%), Hefei University of Technology, 2018.
- Excellent Merit Student (Top 1%), Hefei University of Technology, 2014-2018 (three times).

PUBLICATIONS

Per convention of the community, authors of a paper in TCS conference proceedings or journals have equal contribution and are sorted alphabetically.

- **Manuscripts:**

- [Sungjin Im](#), [Ben Moseley](#), Chenyang Xu, Ruilong Zhang.
Online State Exploration: Competitive Worst Case and Learning-Augmented Algorithms.
Manuscript, 2022.
- [Vincent Chau](#), Christoph Damerius, [Peter Kling](#), [Minming Li](#), Florian Schneider, Ruilong Zhang.
Scheduling with Calibration for Multi-interval Jobs.
Under review in *Algorithmica*, 2021.
- Christoph Damerius, [Peter Kling](#), [Minming Li](#), Florian Schneider, Ruilong Zhang.
Improved Scheduling with a Shared Resource via Structural Insights.
Under review in *Information and Computation*, 2021.

• **Conferences:**

- [Sungjin Im](#), [Ben Moseley](#), Chenyang Xu, Ruilong Zhang.
Online Dynamic Acknowledgement with Learned Predictions.
IEEE International Conference on Computer Communications 2023 (INFOCOM 2023).
- Qingyun Chen, [Sungjin Im](#), [Ben Moseley](#), Chenyang Xu, Ruilong Zhang.
Min-max Submodular Ranking for Multiple Agents.
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023).
- [Bo Li](#), [Xiaowei Wu](#), Chenyang Xu, Ruilong Zhang.
Multiagent MST Cover: Pleasing All Optimally via A Simple Voting Rule.
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023).
- [Bo Li](#), [Minming Li](#), Ruilong Zhang.
Fair Scheduling for Time-dependent Resource.
Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS 2021).
- Christoph Damerius, [Peter Kling](#), [Minming Li](#), Florian Schneider, Ruilong Zhang.
Improved Scheduling with a Shared Resource via Structural Insights.
The 14th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2020).
- [Vincent Chau](#), [Minming Li](#), Yinling Wang, Ruilong Zhang, Yingchao Zhao.
Minimizing the Cost of Batch Calibrations.
The 25th International Computing and Combinatorics Conference (COCOON 2019).

• **Journals:**

- [Ben Moseley](#), Ruilong Zhang, Shanjiawen Zhao.
Online Scheduling of Paralleizable jobs in the Directed Acyclic Graphs and Speed-up Curves Models.
Theoretical Computer Science 2022.
- [Bo Li](#), [Chenhao Wang](#), Ruilong Zhang.
A Note on the Online Interval Scheduling Secretary Problem.
Operations Research Letters 2022.
- [Vincent Chau](#), [Minming Li](#), Yinling Wang, Ruilong Zhang, Yingchao Zhao.
Minimizing the Cost of Batch Calibrations.
Theoretical Computer Science 2020.

PROFESSIONAL SERVERIES

I have been or will be a reviewer for the following conferences and journals:

- Conferences:
WWW 2023, AAAI 2023, TAMC 2022, SAGT 2022, NeurIPS 2022, KDD 2022, SPAA 2022, ICML 2022, AAIM (2020, 2019), NCTCS 2019.
- Journals:
Mathematical Foundations of Computing, Theoretical Computer Science, Frontiers of Computer Science.

TALKS

- Fair Scheduling for Time-Dependent Resources.
Virtual, NeurIPS 2021

REFERENCE LETTERS

- Minming Li, Ph.D.
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Hong Kong, Kowloon Tang
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[Personal Website](#)
- Sungjin Im, Ph.D.
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Electrical Engineering and Computer Science
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- Benjamin Moseley, Ph.D.
Carnegie Bosch Associate Professor of Operation Research
Courtesy Associate Professor of Machine Learning
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