

RUNZHOU TAO

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CONTACT INFORMATION

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EDUCATION

2019–2024 Ph.D. in Computer Science,
Columbia University, New York, NY, U.S.A.
Advisor: [Ronghui Gu](#)
2021 M.S. in Computer Science,
Columbia University, New York, NY, U.S.A.
2019 B.E. in Computer Science,
Yao Class, Institute for Interdisciplinary Information Sciences,
Tsinghua University, Beijing, China

RESEARCH INTERESTS

Programming language, formal verification, quantum computing, theoretical computer science

RESEARCH EXPERIENCE

2021 Summer CertiK, New York, NY, USA
Research Intern
2018 Summer Carnegie Mellon University, Pittsburgh, PA, USA
Research Assistant, advised by [Venkatesan Guruswami](#)
2018 Spring Harvard University, Cambridge, MA, USA
Research Assistant, advised by [Boaz Barak](#)
2017 Summer The University of Hong Kong, Hong Kong, China
Research Assistant, advised by [Zhiyi Huang](#)

PUBLICATIONS

(Authors in the papers in theoretical computer science are listed in alphabetical order, while other papers are in contribution order.)

- SOSP 2021 *Formal Verification of a Multiprocessor Hypervisor on Arm Relaxed Memory Hardware*
To appear **Runzhou Tao**, Jianan Yao, Xupeng Li, Shih-Wei Li, Jason Nieh, Ronghui Gu
- OSDI 2021 *DistAI: Data-Driven Automated Invariant Learning for Distributed Protocols* [\[link\]](#)
Best paper award Jianan Yao, **Runzhou Tao**, Ronghui Gu, Jason Nieh, Suman Jana, Gabriel Ryan.
- PLDI 2021 *Gleipnir: Verified Error Bounds for Quantum Programs and Compiler Transformations* [\[link\]](#)
Runzhou Tao, Yunong Shi, Jianan Yao, John Hui, Frederic T. Chong, Ronghui Gu.
- FOCS 2020 *Edge-Weighted Online Bipartite Matching* [\[link\]](#)
Best paper award Matthew Fahrbach, Zhiyi Huang, **Runzhou Tao**, Morteza Zadimoghaddam.
- APPROX 2019 *Streaming Hardness of Unique Games* [\[link\]](#)
Venkatesan Guruswami, **Runzhou Tao**.
- SODA 2019 *Tight Competitive Ratios of Classic Matching Algorithms in the Fully Online Model* [\[link\]](#)
Zhiyi Huang, Binghui Peng, Zhihao Gavin Tang, **Runzhou Tao**, Xiaowei Wu, Yuhao Zhang.

MANUSCRIPTS

- Manuscript *Contract-based Verification of a Realistic Quantum Compiler* [\[link\]](#)
Yunong Shi, **Runzhou Tao**, Xupeng Li, Ali Javadi-Abhari, Andrew W. Cross, Frederic T. Chong, Ronghui Gu.
- Manuscript *Symmetric Boolean Factor Analysis with Applications to InstaHide* [\[link\]](#)
Sitan Chen, Zhao Song, **Runzhou Tao**, Ruizhe Zhang
- Manuscript *Solving Tall Dense SDPs in the Current Matrix Multiplication Time* [\[link\]](#)
Baihe Huang, Shunhua Jiang, Zhao Song, **Runzhou Tao**
- Manuscript *InstaHide's Sample Complexity When Mixing Two Private Images* [\[link\]](#)
Baihe Huang, Zhao Song, **Runzhou Tao**, Ruizhe Zhang, Danyang Zhuo

AWARDS

- 2021 OSDI 2021 **Jay Lepreau Best Paper Award**
- 2020 FOCS 2020 **Best Paper Award**
- 2019 ACM/ICPC North America Championship, **Finalist**
Teammates: Hengjie Zhang, Zhengjia Xu
- 2019 ACM/ICPC Regional (New York), **Champion**
Teammates: Hengjie Zhang, Zhengjia Xu
- 2019 Outstanding Graduate of Tsinghua University
- 2019 Outstanding Graduate of Beijing City
- 2019 **Yao Award**
- 2016 Baidu First-Class Scholarship
- 2015 ACM/ICPC Regional (Hefei), **Gold Medal**
Teammates: Yue Yu, Shuxin Chen
- 2014 Chinese Mathematical Olympiad, **Gold Medal**
- 2014 (China) National Olympiad in Informatics, **Silver Medal**

TEACHING EXPERIENCE

2020 Fall COMS4236: Introduction to Computational Complexity, Columbia University
Instructor: Prof. Xi Chen

2020 Spring CSEE6180: Modeling and Performance Evaluation, Columbia University
Instructor: Prof. Vishal Misra

2019 Spring Theory of Computation, Tsinghua University
Instructor: Prof. Ran Duan
weekly office hours, grading homework assignments and exams.

CODING SKILLS

C/C++, Python, Latex, Coq, Lean