CHENGHAO GUO

✉ chenghao@mit.edu

EECS, Massachusetts Institute of Technology

EDUCATION

Institute for Interdisciplinary Information Sciences (Yao Class), Tsinghua University   *Sep 2016 - June 2020*
Bachelor of Engineering

Massachusetts Institute of Technology   *Sep 2020 - present*
EECS Ph.D.

HONORS AND AWARDS

Silver Medal of Yao Award   *for top Yao Class students in academic performance, 2019*
Gold Medal in Chinese Physical Olympiad   *2015*

RESEARCH INTERESTS

Algorithms in Randomized Settings · Information Theory · Complexity

RESEARCH EXPERIENCES

Quantum information, Tsinghua University   *Nov 2016 - Aug 2018*
- supervised by Xiongfeng Ma
- fields covered: quantum state measurement

Algorithmic game theory, the University of Hong Kong   *July 2018 - June 2020*
- supervised by Zhiyi Huang
- fields covered: sample complexity of mechanism design

Algorithm and Complexity, Columbia University   *Feb 2019 - present*
- supervised by Xi Chen, Omri Weinstein, and Mihalis Yannakakis
- fields covered: smoothed analysis, data structure

Computational Statistics and Information Theory, Massachusetts Institute of Technology   *June 2020 - present*
- supervised by Guy Bresler and Yury Polyanskiy
- fields covered: broadcasting of information, average-case complexity

PUBLICATIONS

Authors are in alphabetic order unless otherwise specified

Settling the Sample Complexity of Single-parameter Revenue Maximization (STOC 2019) [arXiv]
with Zhiyi Huang and Xinzhi Zhang
presenter on STOC 2019
Sample Complexity of Single-parameter Revenue Maximization (SIGecom Exchanges Vol 17.2)

Smoothed Complexity of Local Max-Cut and Binary Max-CSP (STOC 2020) [arXiv]
with Xi Chen, Emmanouil Vlatakis, Mihalis Yannakakis and Xinzhi Zhang

Decomposition of a Symmetric Multipartite Observable (Phys. Rev. A, May 2019) [arXiv]
with You Zhou and Xiongfeng Ma (joint first author with You Zhou)

Generalizing Complex Hypotheses on Product Distributions: Auctions, Prophet Inequalities, and Pandora's Problem (COLT 2021) [arXiv]
with Zhiyi Huang, Zhihao Gavin Tang and Xinzhi Zhang

PREPRINTS

Linear Programs with Polynomial Coefficients and Applications to 1D Cellular Automata [arxiv]
with Guy Bresler and Yury Polyanskiy

Smoothed Complexity of 2-FLIP in Local Max-Cut
with Xi Chen, Emmanouil Vlatakis and Mihalis Yannakakis