

Brice HUANG

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EDUCATION

- JAN 2020 – PRESENT | **Massachusetts Institute of Technology**, Cambridge, MA.
PHD STUDENT IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE.
Advised by Guy Bresler and Nike Sun.
- JAN 2020 – FEB 2022 | **Massachusetts Institute of Technology**, Cambridge, MA.
S.M. ELECTRICAL ENGINEERING AND COMPUTER SCIENCE.
- SEP 2015 – JUN 2019 | **Massachusetts Institute of Technology**, Cambridge, MA.
B.S. MATHEMATICS AND EECS. GPA 5.0/5.0.

PUBLICATIONS AND PREPRINTS

- **Threshold for Detecting High Dimensional Geometry in Anisotropic Random Geometric Graphs.**
M. Brennan, G. Bresler and B. Huang, preprint 2022. [arXiv:2206.14896](https://arxiv.org/abs/2206.14896).
- **Tight Bounds for State Tomography with Incoherent Measurements.**
S. Chen, B. Huang, J. Li, A. Liu, and M. Sellke, preprint 2022. [arXiv:2206.05265](https://arxiv.org/abs/2206.05265).
- **Tight Bounds for Quantum State Certification with Incoherent Measurements.**
S. Chen, B. Huang, J. Li and A. Liu, *FOCS* 2022. [arXiv:2204.07155](https://arxiv.org/abs/2204.07155).
- **Tight Lipschitz Hardness for Optimizing Mean Field Spin Glasses.**
B. Huang and M. Sellke, *FOCS* 2022. [arxiv:2110.07847](https://arxiv.org/abs/2110.07847).
- **The Algorithmic Phase Transition of Random k -SAT for Low Degree Polynomials.**
G. Bresler and B. Huang, *FOCS* 2021. [arXiv:2106.02129](https://arxiv.org/abs/2106.02129).
- **De Finetti-Style Results for Wishart Matrices: Combinatorial Structure and Phase Transitions.**
M. Brennan, G. Bresler, and B. Huang, preprint 2021. [arXiv:2103.14011](https://arxiv.org/abs/2103.14011).
- **Cyclic Descents for General Skew Tableaux.**
B. Huang, *Journal of Combinatorial Theory, Series A* **169** (2020). [arXiv:1808.04918](https://arxiv.org/abs/1808.04918).
- **On the Local Geometry of Graphs in Terms of Their Spectra.**
B. Huang and M. Rahman, *European Journal of Combinatorics* **81** (2019), 378–393. [arXiv:1807.06034](https://arxiv.org/abs/1807.06034).
- **An Upper Bound on the Number of $(132, 213)$ -Avoiding Cyclic Permutations.**
B. Huang, *Discrete Mathematics* **342**(6) (2019), 1762–1771. [arXiv:1808.08462](https://arxiv.org/abs/1808.08462).
- **Convergence of Maximum Bisection Ratio of Sparse Random Graphs.**
B. Huang, *Electronic Communications in Probability* **23** (2018), paper no. 51. [arXiv:1802.01619](https://arxiv.org/abs/1802.01619).

INVITED TALKS

- **The Algorithmic Phase Transition of Random k -SAT for Low Degree Polynomials.**
FOCS 2021. February 2022.
- **Algorithmic Barriers in Random Optimization Problems from the Overlap Gap Property.**
Foundations of Data Science Institute (FODSI) Retreat. January 2022.
- **The Algorithmic Phase Transition of Random k -SAT for Low Degree Polynomials.**
Northeast Probability Seminar. November 2021.
- **The Algorithmic Phase Transition of Random k -SAT for Low Degree Polynomials.**
Simons Institute Workshop on Rigorous Evidence for Information-Computation Tradeoffs. September 2021.

SELECTED HONORS

AUG 2020	Siebel Scholarship.
APR 2019	NSF Graduate Fellowship.
FEB 2018	9th Place. 2017 W. L. Putnam Math Competition. Honorable Mention in 2015, 2016, 2018.
MAR 2015	2nd Place in Basic Research. Intel Science Talent Search.
FEB 2015	Gold Medal (7th). Romanian Master of Mathematics.

RESEARCH EXPERIENCE

FEB 2020 – PRESENT	Research Groups of Guy Bresler and Nike Sun, Cambridge, MA. Research in high-dimensional probability, statistical physics, and limits of efficient algorithms in these settings.
JUN 2018 – AUG 2018	Duluth REU, Duluth, MN. Undergraduate research in enumerative combinatorics under supervision of Joe Gallian.
APR 2017 – MAY 2018	MIT Department of Mathematics, Cambridge, MA. Undergraduate research in probability and spectral graph theory under supervision of Mustazee Rahman.

TEACHING

SPRING 2022	6.265 Discrete Probability and Stochastic Processes. TA.
SPRING 2019	6.046 Design and Analysis of Algorithms. TA.
FALL 2018	6.046 Design and Analysis of Algorithms. TA.

SERVICE

SEP 2021 – DEC 2021	Reading Group Leader, SIMONS INSTITUTE FOR THE THEORY OF COMPUTING, Berkeley, CA. Organized reading group on the Overlap Gap Property at the Fall 2021 Simons Institute program on Computational Complexity of Statistical Inference.
APR 2020 – JUN 2020	Director, U.S. ERSATZ MATH OLYMPIAD (USEMO), Cambridge, MA. Directed online proof-based competition for U.S. middle and high school students, in response to most math competitions being cancelled by the COVID-19 pandemic.

WORK EXPERIENCE

SUMMER 2017	Software Engineering Intern. Dropbox.
SUMMER 2016	Trading Intern. Jane Street Capital.