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.
Sep 2015 – Jun 2019	**Massachusetts Institute of Technology**, Cambridge, MA. B.Sc. Mathematics and EECS. GPA 5.0/5.0.

Publications and Preprints

- **The Algorithmic Phase Transition of Random k-SAT for Low Degree Polynomials**.
  G. Bresler and B. Huang, preprint 2021. arXiv: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.
- **Cyclic Descents for General Skew Tableaux**.
  B. Huang, *Journal of Combinatorial Theory, Series A* **169** (2020). arXiv: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.
- **An Upper Bound on the Number of $(132, 213)$-Avoiding Cyclic Permutations**.
  B. Huang, *Discrete Mathematics* **342**(6) (2019), 1762–1771. arXiv: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.
- **Monomization of Power Ideals and Generalized Parking Functions**.
  B. Huang, preprint 2015.

Invited Talks

- **The Algorithmic Phase Transition of Random k-SAT for Low Degree Polynomials**.
  Simons Institute Workshop on Rigorous Evidence for Information-Computation Tradeoffs.

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.
Jun 2014	**Team Selection Test Qualifier** (National Top 20) for 2015 U.S. IMO Team.

Research Experience

Feb 2020 – Present	**Bresler Research Group, MIT Department of EECS**, Cambridge, MA. Research in high-dimensional probability and average-case computational complexity.
Jun 2018 – Aug 2018	**Duluth REU**, Duluth, MN. Worked on problems in enumerative combinatorics under supervision of Joe Gallian.
Apr 2017 – May 2018	**MIT Department of Mathematics**, Cambridge, MA. Worked on problems in probability and spectral graph theory under supervision of Mustazee Rahman, in the Undergraduate Research Opportunities (UROP) program.

Teaching

Sep 2018 – May 2019	**Teaching Assistant**, MIT Department of EECS, Cambridge, MA. Taught recitation and designed class materials for 6.046 Design and Analysis of Algorithms.

Work Experience

Jun 2017 – Aug 2017	**Software Engineering Intern**, Dropbox, Inc., San Francisco, CA.
Jun 2016 – Aug 2016	**Trading Intern**, Jane Street Capital, LLC, New York, NY.

Service

Apr 2020 – Jun 2020	**Director**, U.S. Ersatz Math Olympiad (USEMO), Cambridge, MA. Co-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.
Apr 2017 – May 2018	**Vice President**, MIT Undergraduate Math Association, Cambridge, MA. Organized MIT Student Colloquium of Undergraduates in Math and social events for MIT math majors.
May 2016 – Present	**Grader**, U.S.A. Math Olympiad (USAMO), Cambridge, MA. Graded the U.S.A. Math Olympiad and U.S. Team Selection Tests for the International Math Olympiad. Test-solved Team Selection Test problem proposals.