ADITHYA BHASKARA

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References available upon request.
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Google Scholar

Education

- **University of Colorado Boulder** — Boulder, Colorado
  B.S. Computer Science; B.S. Applied Mathematics; B.A. Mathematics — *August, 2022 - May, 2026 (Expected)*
  ***Major GPA:** 4.000, **Cumulative GPA:** 3.991 (as of May. 2025) Transcript.*

  Thesis Work: Tradeoffs Between Randomness, Robust Alternate Selection, and Other Desiderata for Sortition (Title TBD)
  Advised by Bailey Flanigan, Ph. D. and Rafael Frongillo, Ph. D.

  ***Relevant Coursework:** 7 Graduate Courses: Linear and Integer Programming, Algebra 1, Theory of Computation, Design and Analysis of Algorithms, Advanced Algorithms, Algorithmic Economics, Advanced Convex Optimization, Complexity Theory (Audit)*

Research Experience

University of Colorado Boulder — **Undergraduate Researcher**

Research interests include topics in (broadly) theoretical computer science, especially algorithmic economics, computational social choice theory, matrix multiplication, and (fine-grained) complexity theory.

Advised by Rafael Frongillo, Ph. D. — *May, 2023 - Present*

- Seeking to understand and capture the design spaces of liquidity provisioning and transaction fee protocols in prediction markets and decentralized exchanges.
- Thinking about liquidity provisioning as multiple automated market makers running in parallel and resulting implications.
- Assisted Rafael Frongillo with reviewing two submissions to SODA'25 and Management Science (2023).
- Regular attendee and presenter in the algorithmic economics reading group.
- Attended EC'24, EC'25.

Advised by Huck Bennett, Ph. D. — *February, 2025 - Present*

- Seeking to develop algorithms for special cases of the MatrixMultiplicationVerification problem using Lee metric codes, rank metric codes, and other techniques from coding theory.
- Hoping to take advantage of the structure of the matrices to create better algorithms; project joint with Noah Stephens-Davidowitz, Ph. D.
- Surveying the fine-grained complexity of linear algebraic problems by studying fine-grained reductions.

Preprints

1. Adithya Bhaskara, Rafael Frongillo, and Maneesha Papireddygari. A general theory of liquidity provisioning for prediction markets. *arXiv preprint arXiv:2311.08725*, 2025

Talks

1. Adithya Bhaskara, Rafael Frongillo, and Maneesha Papireddygari. A general theory of liquidity provisioning for automated market makers, 2024. Workshop on Blockchains and Decentralized Finance at the 25th ACM Conference on Economics and Computation (EC'24), Recording.

Honors and Awards

- Admitted to The Cornell, Maryland, Max Planck Pre-doctoral Research School in Computer Science — *March, 2025*
- Awarded a Boettcher Foundation Educational Enrichment Grant to Attend STOC'25 — *March, 2025*
- Awarded the Marlene Massaro Pratto and David Pratto Scholarship in Mathematics — *June, 2024*
- Awarded the Western Digital We.care Scholarship (Declined) — *May, 2022*
- Awarded the Boettcher Scholarship (Undergraduate Merit-Based Full Ride) — *April, 2022*
- University of Colorado Boulder Engineering Honors Student — *February, 2022*
- Recognized as a National Merit Finalist — *February, 2022*
- Awarded the Horace M. Hale Esteemed Scholarship — *January, 2022*
- Awarded the Colorado School of Mines Medal of Achievement in Mathematics and Science — *May, 2021*

Scholarly Service & Additional Research Activity

- Engineering Honors Program Admissions Reviewer — *University of Colorado Boulder, 2024, 2025*
  - Executive Committee Member — *2024*
- Norlin Scholarship Admissions Reviewer — *University of Colorado Boulder, 2023, 2024, 2025*
- Boettcher Scholarship Recruitment & Alumni Ambassador — *Boettcher Foundation, 2025*
- Engineering Honors Program First-Year Seminar Recitation Leader — *University of Colorado Boulder, 2024*
- Semi-technical blog on topics in mathematics and theoretical computer science at https://officialadithya.github.io/blog/

Teaching Experience

University of Colorado Boulder

- CSCI 3104: Algorithms, Spring 2024, Fall 2025. Course Assistant.
- CSCI 3155: Principles of Programming Languages, Spring 2025. Course Assistant.
- MATH 1300: Calculus I, Spring 2023. Learning Assistant.
- Scribed course notes while taking MATH 2135: Linear Algebra for Mathematics Majors in Fall 2022.

Silver Creek High School

- Instructional Student Assistant (ISA) Program Director, Fall 2021-Spring 2022. Oversaw 7 ISAs.
- College-Preparatory Physics, Spring, Fall 2021-Spring 2022. Instructional Student Assistant.
- High School Algebra I, Fall 2020. Instructional Student Assistant.
- High School Algebra II, Spring 2020. Instructional Student Assistant.

Innovation Center of St. Vrain Valley Schools

- Advanced Cybersecurity with Python Programming, Summer 2023. (Intensive 7-Hour/Day Weeklong Course). Instructor.
- Fundamentals of Cybersecurity, Summers 2019-2022. (Intensive 7-Hour/Day Weeklong Course). Instructor.

References

[1] Adithya Bhaskara, Rafael Frongillo, and Maneesha Papireddygari. A general theory of liquidity provisioning for automated market makers, 2024. Workshop on Blockchains and Decentralized Finance at the 25th ACM Conference on Economics and Computation (EC'24).

[2] Adithya Bhaskara, Rafael Frongillo, and Maneesha Papireddygari. A general theory of liquidity provisioning for prediction markets. *arXiv preprint arXiv:2311.08725*, 2025.