

# Ethan Mader

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## EDUCATION

**Computer Science Ph.D., Purdue** | Aug 2024 - Present | West Lafayette, IN

**GPA:** 3.93/4.0; focus on theoretical computer science, advised by Kent Quanrud

**Computer Science B.S., Mathematics B.S., UCSB** | Sep 2020 - June 2024 | Goleta, CA

**GPA:** 3.93/4.0; **SAT:** Math 800; **SAT Math II:** 800; Theta Tau Professional Engineering Fraternity

## AWARDS & HONORS

- **Presidential Excellence PhD Award:** \$40,000 over 4 years given to the top 1.4% of PhD students at Purdue in 2024
- **Herbold Scholarship:** Chosen to receive \$10,000 out of 200+ CS PhD students at Purdue
- **UCSB Dean's Honors:** Awarded for 11 of 12 academic quarters
- UCSB *magna cum laude* in College of L.S., *cum laude* in CoE
- 82<sup>nd</sup> Putnam exam: Scored in the top half of the country

## RESEARCH

**Research Assistant, Purdue** | Sep 2024 - Present | West Lafayette, IN

- Compiled and simplified state-of-the-art techniques for decomposing a graph into well-connected clusters, an important structure for efficiently running flow through a network
- Currently exploring theoretical approaches to break the 3-approximation barrier for the classic edit distance problem under runtime constraints

**Undergrad Researcher, UCSB Programming Languages Lab** | Jan - June 2023 | Goleta, CA

- Developed novel techniques for algorithmically generating mathematical proofs via code
- My findings motivated the decision to translate a theorem proving package intended for circuit designers from Agda to Coq

## TEACHING

**Math and CS Tutor, Wyzant** | June 2023 - Sep 2024 | CA

- Remote instruction on competition math and C++ fundamentals, data structures, and algorithms
- 200+ hours and perfect 5-star rating across 30 reviews, with one-time and long-term clients

## QUANT PROJECTS

**Weather Prediction**

- Implemented a Naïve Bayes classifier from scratch in C++ using 1000 CSV test files to predict future weather classifications with prior month's data at 1-day intervals
- Incorporated both discrete and continuous variables to obtain 66% accuracy

**QUANT SKILLS:** Python (Numpy, Pandas, cvx, Scikit-Learn), SQL, C++, Backtesting, Mathematica, Convex Optimization, Linear Algebra, LaTeX

**INTERESTS:** Jane Street monthly puzzles, bullet chess (top 2% on chess.com), rock climbing, tennis, hiking