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
- 82nd Putnam exam: Scored in the top half of the country

RESEARCH

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

- Researched and summarized state-of-the-art graph decomposition techniques to improve efficiency of flow-based algorithms on large networks
- 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, enhancing formal verification techniques
- Research findings led to the translation of a theorem-proving package from Agda to Coq for broader use in circuit verification

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

- Trained a Naïve Bayes classifier from scratch in C++ using 1000 months of historical CSV data to predict future weather classifications given previous 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