

Mathias Ooi

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EDUCATION

University of California, Santa Barbara

Santa Barbara, CA

Bachelor of Science in Computer Science + Mathematics

Sep. 2023 – May 2025

- Relevant coursework: CS Problem Solving II, Object Oriented Design and Implementation, Differential Equations, Transition to Higher Mathematics, Probability and Statistics (ongoing)
- Planned coursework: Data Structures and Algorithms I & II (winter & spring)

University of California, Irvine

Irvine, CA

Summer Session

Summer 2023

- Relevant coursework: Linear Algebra (proof-based), Combinatorics, Multivariable Calculus, Probability I

EXPERIENCE

Gender Biases in Wikipedia

Cupertino, CA

Oct. 2021 – Dec. 2021

- Parsed and filtered Wikipedia XML dumps for infoboxes
- Analyzed for gender discrepancies (infoboxes for men include relatively more education/career data while females include more family/physical data)

Connecting Futures Now

Aug. 2021 – Present

Santa Clara, CA

- Developed a highly customizable iOS math app in Swift for non-verbal autistic students
- Collaborated with parents and students to iterate on app design

Competitive Programming

Aug. 2020 – Dec. 2022

- Reached USA Computing Olympiad Gold level
- Competed in other competitions Project Euler (top 1%), Advent of Code

PROJECTS

Scheme Interpreter | C++, Scheme

Jan. 2023 - Present

- Created an MIT Scheme interpreter in C++ with garbage collection and tail-recursion (trampolining)

Delaunay Triangulation | C++, Python, Matplotlib

Aug. 2023 - Present

- Implemented an incremental Delaunay triangulation program based on the Bowyer–Watson algorithm

Ray Tracer | C++

May 2021

- Built a simple C++ ray tracer based on the *Ray Tracing in One Weekend* series

Anti Othello Website | JavaScript, HTML, CSS

Oct. 2021

- Deployed an interactive website to play anti-othello against a bot
- Utilized a minimax algorithm with alpha-beta pruning to optimize bot moves

Cubic Bézier Curve Library | Python

Aug 2021

- Created an open-source Python library for visualizing cubic bézier curves

TECHNICAL SKILLS

Languages: C++, Python, C, SQL, Julia, Swift, JavaScript, HTML/CSS

Frameworks: React, Node.js

Libraries: Git, NumPy, Pandas, SciPy, Matplotlib, PyTorch, OpenCV, BeautifulSoup, RegEx