Jonah Zhao

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EDUCATION

University of Minnesota, Twin Cities - *Computer Science/Mathematics*   *Expected 05/2026*
- GPA: 3.913 (Dean's List Fall 2023, Spring 2024, Fall 2024)
- Relevant Courses: Honors Introduction to Computing and Programming Concepts; Honors Introduction to Algorithms and Data Structures; Calculus I - III; Introduction to Probability and Statistics; Linear Algebra; Applied Linear Algebra; Ordinary Differential Equations; Sequences, Series and Foundations; Physics I; Honors Physics II, Physics III, Machine Architecture and Organization, Advanced Programming Principles
- Ongoing Courses: Program Design & Development, Ethics in Computing, Algorithms and Data Structures, Intro to Combinatorics

SKILLS

- Data Science: Python, Numpy, Matlab, R, LaTeX, OCaml, Microsoft Office
- Web Dev: Java, JavaScript, TypeScript, C, C++, SQL, HTML, React, Next.js, Github, MongoDB, Postgres

EXPERIENCE

North Carolina A&T State University - *Data Science and Machine Learning REU*   *05/20/24 - 06/26/24*
- Participated in workshops on multiple different topics within data science and machine learning.
- Conducted research under Dr. John P. Ward on discretization and optimization using graph/network models. Developed an algorithm to discretize and find the minimum of a 1D Lipschitz continuous function that outperformed the SciPy SHGO algorithm in terms of function evaluations and accuracy on 5/17 test problems. Currently finalizing a paper for publication to a research journal.

University of Minnesota, Minneapolis - *Mathematics Undergraduate Learning Assistant*   *09/05/23 - 12/21/23*
- Led activities during lecture, graded quizzes, provided feedback to students about demonstrated written and oral mathematical communication.

Mathnasium of Mankato - *Instructor*   *06/20 - 11/2022*
- Taught groups of up to 4 students mathematics at the K-12 level.

PROJECTS

Chess Game
- Created a program using Java that allows two players to play chess in the terminal.

Contact Log
- Wrote a contact log program in C that uses memory allocation, reading and writing files, building data structures, and takes in interactive user input.

Minesweeper
- Built the game Minesweeper in Java using stack and queue data structures.

Lisp Parser
- Implemented a Lisp parser in OCaml using evaluator, scanner, parser, and printer modules that takes in Lisp code in a text file, executes it in OCaml, and prints the output.

Next.js Invoice Handling Web Application
- Built a web application using Next.js that incorporates React, TypeScript, HTML, accessing a database in MongoDB, and Postgres.
- Features include a login page, a page for invoices with search functionalities, a page for customers, editing, deleting, and adding invoices, and error handling.

Personal Website
- Built a personal website using Next.js that incorporates React, TypeScript, HTML, and EmailJS.
- Features include a homepage, a tutoring sign-up page that includes a form that sends me an email when someone signs up, and a CV page with my resume embedded in it.

AWARDS

Dean's List - Fall 2023, Spring 2024, Fall 2024
National Merit Scholarship Finalist - 2023
- Awarded the National Merit $2,500 Scholarship, a distinction earned by less than 1% of test takers, for exceptional academic achievement, leadership, and potential.

Create Award, VEX Robotics World Championship - 2023
- Awarded to the team with the most creative engineering design solution to one or more of the challenges of the competition.

US Presidential Scholars Program Candidates- 2023