

Ivan Zhao

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EDUCATION

University of Pennsylvania, College of Arts & Sciences – Philadelphia, PA **May 2024**
Bachelor of Arts in Computer Science Second Major: *Bachelor of Arts in Biology* Cumulative GPA: 3.95/4.00

TECHNICAL SKILLS

Java, Python, C++, R, SageMath, MySQL, MongoDB, Neo4J, JavaScript, React, Node.js, HTML, CSS, LaTeX, Git, Unix.

RELEVANT COURSEWORK

Computer Science: Algorithms and Data Structures, Database and Information Systems, Software Engineering and Design, Programming Languages & Techniques, Architecture, Discrete Mathematics, Computability & Complexity.

Math: Multivariable Calculus, Vector Calculus, Linear Algebra, Statistics and Probability.

Business: Microeconomics I, Macroeconomics I.

EMPLOYMENT EXPERIENCE

Cereal4Dinner (Nonprofit Startup) | Full Stack Engineer | Philadelphia, PA **January 2023 – Present**

- Built a web app that provides resources to users dealing with depression using React, Node.js, and MongoDB.
- Designed user stories, user flow diagrams, sequence diagrams, wireframes/prototypes, and API documentation.
- Implemented features such as login, registration, goals setter, resource directory, etc.

Children's Hospital of Philadelphia | Researcher | Philadelphia, PA **September 2021 – January 2023**

- Developed informatics, heatmaps, scatterplots, and jitter plots, in R to analyze methylation data.
- Worked on projects for the development of tools, and signature constructions, useful for epigenetic research.
- Collected methylation data by extracting DNA from mice.

PROJECTS

Vacation Planner | Database and Information Systems class project | Philadelphia, PA **March 2023 – May 2023**

- Collaborated in team of 4 to design a tool in JavaScript and SQL that helps users plan their next vacation.
- Developed a search feature with various filters for flights using a relational database of 70,000 rows of flight data.
- Optimized queries to improve runtime and cost by analyzing the Explain Plan of our queries.

Kirchhoff's Matrix Tree Theorem | Linear Algebra class project | Philadelphia, PA **April 2023 – May 2023**

- Worked with a partner to study Kirchhoff's Matrix Tree Theorem.
- Used SageMath to write functions that demonstrated the application of Matrix Tree Theorem.
- Wrote paper consolidating proofs, properties, and theorems related to the Matrix Tree Theorem.

VOLUNTEER EXPERIENCE

Science Olympiad at Penn | Event Supervisor | Philadelphia, PA **August 2020 – May 2021**

- Worked in a team of 3 to develop a Science Olympiad event/challenge in microbiology for high schoolers.
- Peer reviewed and commented on other events created by separate teams in the organization.
- Wrote more than 30 well thought out questions for our event and developed a flawless answer key.

HONORS

Dean's List **August 2021 – May 2023**

- Maintained a GPA above 3.7 with no incompletes during sophomore and junior year.