Ivan Zhao

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EDUCATION

University of Pennsylvania, College of Arts & Sciences – Philadelphia, PA   **May 2024**
Bachelor of Arts in Computer Science   Cumulative GPA: 3.98/4.00
Bachelor of Arts in Biology

TECHNICAL SKILLS

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

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**
• Worked in a team to build a web application that provides resources to those dealing with depression.
• Utilized technologies such as React, Node.js, 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 – December 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.