# 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

**Cereal for Dinner** (Nonprofit Startup) | Full Stack Engineer | Philadelphia, PA          **January 2023 – Present**
• Worked in a team to build web application that helps those dealing with depression create and track their goals.
• Designed wireframes and prototypes using Figma.
• Utilized technologies such as React, Node.js, and MongoDB.
• Worked with Google Calendar and Material-UI API to implement features.

**Children's Hospital of Philadelphia**| Researcher | Philadelphia, PA          **September 2021 – December 2022**
• Developed informatics, heatmaps, scatterplots, and jitter plots in R to analyze methylation data.
• Built 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 tool in JavaScript and SQL that helps users plan their next vacation.
• Developed search feature with various filters for flights using relational database of 70,000 rows of flight data.
• Optimized queries to improve runtime and cost by analyzing Explain Plan of queries.

**Kirchhoff's Matrix Tree Theorem** | Linear Algebra class project | Philadelphia, PA          **April 2023 – May 2023**
• Researched with partner to study Kirchhoff's Matrix Tree Theorem.
• Used SageMath to write functions that demonstrated application of Matrix Tree Theorem.
• Wrote paper consolidating proofs, properties, and theorems related to Matrix Tree Theorem.

## VOLUNTEER EXPERIENCE

**Science Olympiad at Penn** | Event Supervisor | Philadelphia, PA          **August 2020 – May 2021**
• Collaborated in team of 3 to develop 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 researched questions for event and developed 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.