

Michael Zhan

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Education

Harvard University

Dec 2024, Expected

M.S. Computational Science and Engineering (GPA: 3.96)

The University of Texas at Austin

May 2023

B.S. Chemical Engineering (GPA: 3.99, High Honors), Elements of Computing Certificate
Engineering Honors Program

Technical Skills

- **Languages:** C++, Python, Java, Ruby, SQL, TypeScript, JavaScript, HTML/CSS, Tailwind CSS
- **Frameworks:** React, Express.js, Node.js, Next.js, Flask, Django, Spring, RESTful APIs, Agile Development
- **Developer Tools:** Git, CI/CD, AWS, Google Cloud Platform, Docker, Linux, Jira

Relevant Professional Experience

Amazon | Austin, TX

May 2024 – Aug 2024

Software Development Engineer Intern

- Migrated internal AWS service onboarding process using Java, Ruby, and AWS services from monolith to decoupled pipeline, reducing onboarding time by 90%.
- Developed workflow using AWS tooling in Ruby, along with dynamic retrieval from event-driven Java API.
- Worked with massive code base and leading frameworks, such as Spring dependency injection.
- Deployed to production in all supported regions, impacting 100% of internal AWS customers.

Georgiou Research Group, UT Austin | Austin, TX

Jan 2020 – May 2023

Undergraduate Research Assistant, Bioinformatics Research

- Developed and implemented single-linkage clustering algorithms for antibody sequence strings for >100,000 inputs in Python and C++. Runs 50% faster than the previous internal tool, with identical results.
- Built k-means clustering workflow with Python sci-kit learn and R to discover new gene segments in ferrets using outlier detection. Discovered 2 new genes with this method.

Genentech, Inc. | San Francisco, CA

Jan 2022 – Dec 2022

Software Engineer Intern – Process Technical Development

- Developed modular automation package for ML dataset generation and visualization with Python, reducing processing time by over 80%. Tool is currently in use across multiple Genentech sites.
- Engineered soft sensor machine learning models for cell culture parameter prediction using sci-kit learn and AutoML libraries with an emphasis on feature optimization. Attained R^2 values of over 0.95.

Relevant Academic Projects

Conway's Game of Life

Jan 2024

- Implemented Conway's Game of Life with configurable options such as grid size and animation speed
- Developed in C++ on Linux as standalone executable, using gtkmm-3.0 library for GUI.

bioRxiv Biology Preprint Newsletter App

Sept 2023

- Automated weekly newsletter retrieves and sends users recent biology preprint papers from bioRxiv server
- Scrapes articles with bioRxiv API and custom search function using Next.js, React, and PostgreSQL.

Book Recommendation App

Aug 2023

- Developed web app to shelve and recommend books for users, using Next.js with React and TailwindCSS.
- Implemented Google OAuth 2.0 and custom credential log-in flows with NextAuth.js
- Retrieves book information with Google Books API, with PostgreSQL database storage

Leadership

Independent Tutor | Austin, TX

May 2020 – Dec 2021

- Tutored 500 hours and over 40 students remotely in high school math and chemistry.
- Managed communication and scheduling directly with students and parents.