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%.
- Optimized design and implementation for scalability.
- Worked with massive code base and leading frameworks, such as Spring dependency injection.
- Deployed to production in all supported regions, benefiting 10,000 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

Online Poker Chips **May 2024**

- Created room-based service to track virtual poker pots, with real-time updates using websockets.
- Built in TypeScript with Next.js and React frontend, running on Express backend.

Minesweeper Clone **May 2024**

- Implemented Minesweeper clone with full game functionality.
- Developed in Java using Swing GUI library.

Tennis Court Reservation Service **Dec 2023**

- Developed service to automate creating reservations in local city court reservation system.
- Implemented scheduling behavior with cron jobs and webpage navigation with Puppeteer.js.
- Built in TypeScript with Next.js and React.

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.