Sophie Zhao

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Education

University of Richmond Richmond, VA

Bachelor of Science in Computer Science, Double Majoring in Mathematics *August 2021 - May 2025*

- GPA: 3.95/4.0
- Related Coursework: Algorithms, Data Structures, Software Systems Development, Computer Organization, Database Systems, Computer Security, Robotics, Music Informatics, Machine Learning, Artificial Intelligence, Human Computer Interaction, Software Engineering Practicum
- Honors: Dean's List (Fall 2021 - Spring 2024), All A's List (Spring 2022 - Spring 2024)

Technical Skills

Programming Languages: Python, Java, C++, SQL, JavaScript, HTML/CSS
Frameworks & **Tools**: Spring Boot, Django, Flask, Git, Docker, React, REST API, Mybatis, Linux
Cloud & **Database Technologies**: MySQL, MongoDB, PostgreSQL, PL/SQL, Redis, AWS
Methodologies: Agile, Scrum, CI/CD, Version Control

Work Experience

Software Engineering Intern May 2024 – July 2024

Zhiper *Shanghai, China*

- Maintained and fixed key features for talent assessment products on the internal management website, managing assessments delivered to 2,000+ candidates, using **Java** and **Spring Boot** as backend infrastructure.
- Designed and implemented a complete assessment workflow for two talent assessment products on both internal management and user-facing platforms, serving over 50+ HR and 3000+ candidate users, employing **RocketMQ** for asynchronous messaging.
- Collaborated with cross-functional teams to generate and configure data models, leveraging **MyBatis** for database interaction and **MySQL** for data storage, ensuring efficient data management aligned with customer needs.
- Engaged in **CI/CD** pipelines and employed **Docker** for smooth, efficient releases.

Software Engineering Intern June 2023 – August 2023

CodeDay *Remote*

- Created a book discovery platform using **Django**, **React.js**, and the **Google Books** API, configuring **AWS RDS** with **PostgreSQL** for efficient data management, and utilized AWS **S3** for optimized image storage and accessibility, resulting in a 30% improvement in platform performance and scalability.
- Engineered key features, including a search page and book review page with upvote/downvote functionality using the **RESTful APIs**, promoting a 20% increase in user engagement and interaction.
- Established a robust user authentication system with simple-**JWT**, supporting user signup, login, and logout, and crafted the frontend for the user profile page, contributing to a 15% boost in user retention.
- Conducted end-to-end and unit tests to ensure code reliability and quality throughout the development lifecycle.

Research & Projects

Robot Fleet Management System, *University of Richmond* September 2024 - Present

- Collaborate with teammates using **Agile** and **Scrum** methodologies to develop a robot fleet management system with UI, system manager, simulator, and database components in **C++**.
- Lead the development and integration of the **MongoDB** database to manage robots and simulation data effectively, applied Catch2 for unit testing.

Dynamic Gesture Recognition, *The HIVE Lab, University of Richmond* August 2023 – May 2024

- Constructed data pipelines for the **OAK-D** camera, utilizing depth and RGB streams for efficient pose estimation and feature extraction.
- Designed dynamic gesture recognition **machine learning** algorithms using **TensorFlow** and **Keras**, achieving 95% accuracy in a biosecure human-robot interaction with a dancing robot.

Audio Processing App, *University of Richmond* March 2023 – April 2023

- Built a **full-stack** application using **Flask** to process uploaded audio files, generate sampled value graphs and spectrograms, and apply low-pass filters for improved clarity, providing an efficient tool for audio analysis.