Zhiwei Zhou (Wayne)

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EDUCATION

Northeastern University Seattle, WA
Master of Science in Computer Science – GPA 4.0 Expected Graduation - 2025
Featured Courses: Data Structures & Algorithm, Database Management, Software Engineering, Cloud Computing

University of Washington Seattle, WA
Bachelor of Arts in Architectural Design – GPA 3.5

SKILLS

- **Programming Languages:** Python, Java, JavaScript, TypeScript, C/C++, SQL, HTML/CSS
- **Frameworks:** React.js, Node.js, Vite.js, Flask, Django, Spring Boot, Tailwind, Bootstrap, FastAPI
- **Databases:** PostgreSQL, MongoDB, DynamoDB, SQLite
- **Cloud Services:** AWS (EC2, Lambda, CloudFront, DynamoDB, RDS, VPC)
- **Tools:** Git, Docker, Matplotlib, Pandas, Power BI, Linux, Tomcat, Postman

PROJECT EXPERIENCE

Banana Maps: Hackathon Team Project - (Feb 2023) *GitHub: https://github.com/zz39/team_banana_hackathon/*

Awarded "**Best in Hack**" of Northeastern University **Hackathon** 2023. Collaborated with a team of six students from various majors to develop a **web application** that helps users reduce their carbon footprint by choosing eco-friendly transportation options.

- Designed and implemented the user interface, navigation bar, and address search functionality of the application using **JavaScript**, **HTML**, and **CSS**. Utilized **Bootstrap** CSS to unify the overall website design concept.
- Integrated Mapbox's **HTTP APIs** to enable navigation features and distance/footprint calculations from start to end location.
- Tested with **Chrome DevTools** and **Lighthouse**, achieving 94% accessibility score and 99% best practice(security) score.
- Presented the application to a panel of judges, receiving positive feedback on usability and social impact.

HOO Bank: Full-Stack Web Application - (Oct 2023) *Link: https://www.wayne39.com/*

Developed a responsive and modern bank website using Vite.js, React.js, Tailwind, Node.js, Express.js, and MongoDB, showcasing skills in full-stack web development and design.

- Implemented a modern, adaptable interface using **HTML/CSS** and **JavaScript**, saving 85% set-up time with **Vite**.js and **React**.js
- Built a secure **RESTful API** using **Node.js** and **Express.js** for user authentication and account management, including registration and login with **JWT** authentication.
- Ensured secure data storage in a **MongoDB** database and deployed the website via Azure Front Door (**CDN**) for improved access performance by 60% (from 0.91s to 0.36s).
- Handled domain registration by routing the site to Azure Front Door through **DNS**, ensuring availability and security.

"Hot Sauce": IoT Development - (Jan 2024 - Present)

Developing an environmental monitoring system for Northeastern University to optimize the building's climate control and improves occupant comfort.

- Researched and integrated **IoT** devices (microcontrollers, sensors, and breadboards) into a prototype monitoring module.
- Implemented air quality, temperature, and VOC sensor data collection using **C++** on Arduino IDE.
- Enabled a **serverless** real-time data pipeline with AWS **Lambda** to store data in **DynamoDB**, reducing latency by 75% through AWS **CloudFront** PoPs.

Rideshare System: Drivers Validator and Simulator - (Nov 2023) *Link: https://github.com/zz39/RideShareSystem/*

Designed and developed a rideshare system using **Java** and **Gradle** to validate prospective driver information and simulate ride requests and assignments.

- Applied **Object-Oriented Design** principles and employed **MVC** architecture, emphasizing a modular and scalable design.
- Implemented an efficient API in Java to facilitate seamless communication between system components.
- Executed thorough unit testing using **JUnit 5**, surpassing a 95% code coverage threshold, validated through meticulous **Jacoco** test coverage analysis, underscoring the system's reliability and robustness.