# Zongze Wu

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## Summary

*Computer Science student passionate about building scalable full-stack applications with modern technologies and contributing to open-source projects*

## Education

**University of Washington, Paul G. Allen School of Computer Science**                    Sept 2024 – June 2026
B.S. in Computer Science

- **Coursework:** Software Design And Implementation, Data Structures and Parallelism, Database Management, Systems Programming (C/C++), Discrete Math, Hardware/Software Interface, Operating Systems, Distributed System(Planning), Computer Security
- **GPA:** 3.83

**Bellevue College**                    Sept 2022 – June 2024
Associate Degree in Art & Science

- **GPA:** 4.0

## Skills

- **Programming Languages:** Java, C/C++, TypeScript, JavaScript, Python, SQL, HTML/CSS
- **Frameworks:** Spring Boot, React 18, Node.js, Express.js, Next.js
- **Cloud  DevOps:** Docker, Kubernetes, CI/CD (GitHub Actions), AWS EC2, Nginx
- **Databases:** PostgreSQL, MySQL, Redis, Query Optimization
- **Tools  Practices:** Git, REST APIs, JWT, Agile/Scrum, TDD, Microservices

## Projects

**Employee Management System** | Full-Stack Developer                    Jun 2025 – Jul 2025

- Built enterprise-grade full-stack application using **React 18**, **TypeScript**, and **Spring Boot 3.x** with comprehensive employee and department management capabilities.
- Implemented secure **JWT authentication** with Spring Security and developed **25+ RESTful APIs** with complete OpenAPI/Swagger documentation.
- Architected production-ready infrastructure using **Docker Compose** for multi-container orchestration, **Nginx** reverse proxy, and **PostgreSQL** database with health monitoring.
- Established complete **CI/CD pipeline** using GitHub Actions, achieving **90%+ test coverage** through JUnit and React Testing Library.
- Optimized frontend performance with Ant Design components, custom React hooks, and responsive design patterns for seamless cross-device experience.

**Enterprise Supply Chain Analysis System** | Fullstack & AI Agent Developer                    Mar 2025 – Jun 2025

- Developed an intelligent supply chain analytics system using **Python** and **Crew AI agent framework** to create specialized agents for financial, sales, and inventory analysis.
- Built interactive dashboards with **React** and **TypeScript** for inventory and sales agents, providing real-time data visualization and analytics capabilities.
- Designed and implemented automated data transformation processes that reduced manual analysis work by **40%**.
- Created custom agent coordination logic that improved response quality and consistency by **35%**.
- Collaborated in brainstorming sessions to identify innovative applications of agent-based systems in enterprise supply chain management.

**Enterprise Food Delivery System** | Backend Developer                    Dec 2024 – Jan 2025

- Designed robust backend services using **Spring Boot** and **Java 17** with complete SDLC from design to deployment.
- Developed **RESTful APIs** for authentication, order management, and delivery tracking with **MyBatis Plus** ORM.
- Implemented **Redis caching** strategies reducing database load by **25%** and ensuring stability under high concurrent loads.
- Achieved **90%+ test coverage** using JUnit and Spring Boot Test framework.
- Integrated **JavaMail API** for automated notifications and managed dependencies with Maven.

**GoBang Web Game with AI Opponent** | Fullstack Developer                     Aug 2024 – Nov 2024

- Developed responsive web-based Gomoku game using **JavaScript (ES6+)**, **Node.js**, and **Express.js** with Canvas API for dynamic rendering.
- Deployed **PostgreSQL** database on **AWS EC2** to store user statistics and implemented real-time data synchronization.
- Integrated **MinMax algorithm with alpha-beta pruning** for AI opponent, optimizing performance with custom scoring functions.
- Implemented comprehensive game features including undo/restart, user authentication, and statistics tracking.
- Designed responsive UI adapting seamlessly across devices and collaborated using **Git** for version control.

## Experience

**Open Source Contributions** | Various Projects                     Sep 2024 – Present

- Resolved complex placeholder resolution issue in **Caddy Server** (30k+ stars) by implementing runtime regex compilation for HTTP header directives, preserving performance while enabling dynamic placeholders (**PR #7117**).
- Designed comprehensive test suite including edge cases and end-to-end tests, ensuring robust placeholder detection and replacement functionality.
- Contributed to **Kubernetes Java Client**, improving API usability by fixing method chaining issues in GenericKubernetesApi.
- Demonstrated ability to understand large codebases quickly and implement production-quality solutions with proper testing.

**Co-Founder**, Tech Giant Club                     Aug 2023 – March 2024

- Led technical workshops on software development practices using **Java**, **TypeScript**, and **Node.js**, helping members develop practical skills aligned with industry standards.
- Organized collaborative programming projects involving full-stack development, exposing members to complete software development lifecycle experiences.
- Improved members' technical communication skills through documentation exercises and technical presentations.
- Increased club membership by **23 members** through engaging hands-on learning experiences.

## Relevant Course Projects

- **Operating System Kernel Implementation (C):** Developed a functioning kernel with system calls, memory management, multi-processing with locks, and filesystem operations, demonstrating deep understanding of low-level system programming.
- **Multi-threaded Search Engine (C++/Java):** Designed and built a client-server architecture for document indexing and retrieval with custom data structures and cross-platform compatibility.
- **Network File Transfer Application (C++):** Created a robust file transfer utility using socket programming with support for multiple protocols, error handling, and efficient data transmission.

## Certificates and Achievements

**Dean's List**, University of Washington                     Fall 2024 – Spring 2025
**Machine Learning Specialization Certificate**, Stanford & DeepLearning.AI                     Nov 2023 – Feb 2024
**HoffMan Prize Award**, Bellevue College Math Department                     Apr 2024