

# Zachary Lee Yi-Hong

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## EDUCATION

**University at Buffalo, The State University of New York**

**Aug 2021-May 2023**

Bachelor of Science, Computer Science

**CGPA: 3.689 / 4.0**

**Coursework:** Software Engineering Concepts, Operating Systems, Modern Algorithms, Computer Security, Data Science

## EXPERIENCE

**Software Engineer Intern, Spawnn**

**Aug 2022-May 2023**

- Collaborated closely with the CEO to establish more than 80% (18+ components) of the Backend architecture, concentrating on scalability and maintainability.
- Led development of an automated test tool, using JS testing frameworks and Python scripting, cutting testing time by 50%.
- Supervised integration of 20 approved API endpoints with Frontend team and troubleshooted blockers by developers.
- Coded more than 50% Backend code and facilitated 50+ code reviews in an Agile environment. Transitioned to Full Stack in 2 weeks and coded 10+ Frontend features using Next.JS and Typescript, contributing to 15% of Front-End codebase.
- Spearheaded company into delivering an Alpha release stage in 4 months, releasing to over 20+ professional collegiate gaming organizations; highly recognized for impact and effort in development and leadership.

**Algorithms and Complexity Teaching Assistant, CSE Department, University at Buffalo**

**Aug 2022- May 2023**

- Conducted office hours and grading for a Junior year Algorithms and Complexity analysis course, involving 300 students.
- Coached students in understanding abstract algorithmic concepts, including divide and conquer, graph, dynamic programming, and stable matching algorithms.

**Open-Source Developer, Make-Open-Source**

**Aug 2022-Mar 2023**

- Coordinated 5 new features and addressed issues at UB's open-source club's Python Classic-RPG style game engine.
- Introduced 3 new core features such as Potions and Money, and classes such as Health and Speed.

## PROJECT

**NoSequelDB [ Full-Stack Engineering ] [Next.JS, Go, Docker]**

**Mar 2023-Ongoing**

- Replicating a NoSQL Document DB similar to MongoDB, with 10+ DB APIs usable in Go.
- Architected 100% of the database and database APIs; achieving a 150-millisecond average latency per API.

**Next Portfolio Template [ Full-Stack Engineering ] [TypeScript, Next.JS, TailwindCSS, DaisyUI]**

**Mar 2023-Apr 2023**

- Constructed a Full-Stack portfolio template with 6 features, parsing a custom JSON file into a responsive UI website; achieving an average TTI score of 2540 milliseconds.
- Integrated ease of scalability of content, through effective use of efficient pagination and high decoupling.

**Web Hosted Password Manager [ Full-Stack Engineering ] [Go, MongoDB, Railway]**

**Dec 2022-Mar 2023**

- Conceptualized and implemented a Full-Stack password manager in 2 weeks, focusing on security and ease of maintenance while leveraging industry standard protocols such as AES and RSA to safely communicate transactions.
- Open-sourced this project and wrote 2 detailed technical documents, reducing ramp-up time by 40%.

**File System Visualizer [ Backend Engineering ] [Python3, p5pi, OOP]**

**Nov 2022**

- Engineered a Backend visually intuitive file system graph using advanced traversal algorithms and optimized data structures; cross-tested on 3 operating systems - Windows, macOS, and Linux platforms.
- Designed a modular architecture based on best OOP practices, resulting in 40% faster development time.

**Project Fines [ Backend Engineering ] [NodeJS, Express.JS, MongoDB]**

**Jun 2022-Sep 2022**

- Led a team of 2 in development of a Full-Stack traffic infringement fining system.
- Conceived, architected, and developed 100% of the Backend, prioritizing a robust database and codebase design; focusing on code modularization, readability, and maintainability; cutting development time by 20%.

## SKILLS

**Languages:** Golang, TypeScript, Python3, JavaScript, C

**Tools/Technologies:** GitHub, Vercel, Linux OS, MongoDB, Debuggers, Hadoop, Jira, Elasticsearch, p5, Docker, Next.JS, NodeJS, SQL, ElectronJS, OOP, ReactJS, TailwindCSS, DaisyUI, Jupyter, Scrum, ZenHub, JSON, Bash, Spark

**Technical concentration:** Web development, Application development

**Certifications:** AWS Certified Developer Associate (Ongoing)