

CHENKAI(BUCKY) YU

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EDUCATION

Carnegie Mellon University

August 2023 – December 2024

Master of Science in Software Engineering

Relevant Coursework: Software Architecture and Design, Data Science for Software Engineering, Software Engineering Method

Lehigh University

September 2019 – May 2023

Bachelor of Arts & Bachelor of Science, Dual Degree in Computer Science Engineering & Economics

Relevant Coursework: Discrete Structures & Algorithms, Database Theory and Application, Artificial Intelligence: Theory and Practice.

TECHNICAL SKILLS

Coding Tools: Python, Go, HTML, Tailwind CSS, TypeScript, MySQL, GraphQL, Socket, React, Node.JS,

Other SDE Tools: Agile, Scrum, Git, Rest API, CI/CD, Data Mining and Validation, Google Analytics, ESLint, AWS Lambda

EXPERIENCE

Software Engineering Intern, Influxer

June 2024 – August 2024

Go, React, JavaScript, MySQL, GraphQL

- Developed a key Enterprise System module that enabled large-scale data editing across external and in-house databases, reducing external API calls by 90%, boosting operational efficiency.
- Engineered backend services using Go, designing **REST APIs** for structured data access, while establishing robust and seamless data synchronization with web sockets with **OAuth 2.0** and JWT to ensure secure API access and user verification.
- Leveraged **GraphQL** with Shopify APIs to optimize payload size, enhancing data retrieval speed and reducing bandwidth usage.
- Employed **MySQL** for data retrieval and structured data schemas on SQLite to reduce database calls to improve access efficiency.
- Developed the frontend with React and JavaScript, integrating MUI components to deliver a responsive and intuitive UI.
- Conducted the migration of server infrastructure from a Go-based server to **AWS Lambda** (Node.js), resulting in improved resource utilization and enhanced system scalability.

Graduate Teaching Assistant, Foundations of Software Engineering, Carnegie Mellon University (CMU)

January 2024 – Present

JavaScript, React, MongoDB, PostgreSQL, HTML, Web Socket

- Mentored graduate students developing a web application aimed at enhancing emergency response, using JavaScript, HTML, CSS, React, MongoDB/ PostgreSQL, Web Socket, and JWT with practices like prototyping, CI/CD, Unit Tests, and Integration Tests.
- Led weekly **stand-up** meetings, applying **Agile** and **Scrum** methodologies to the **SDLC** cycle and ensuring team alignment.
- Guided students in **MVC** system architecture design, software design patterns, and **RESTful API design** and development.
- Oversaw the design of a user-centric web interface with react and the integration of security features like JWT for authentication.
- Conducted comprehensive weekly code reviews and oversaw implementation of Unit/Integration Test for **Quality Assurance**.

Graduate Research Fellow, CMU

August 2024 – Present

Python, Statistical Analysis, Machine Learning, Visualization, Data Processing, Data Privacy, React

- Analyzed team formation strategies in SWE education, identifying crucial factors for students' success using correlation analysis.
- Designed a scalable backend system with a React frontend to enable real-time data integration, analysis, and visualization, streamlining future data integration and analytics insights for researchers and educators.
- Built data pipelines to clean, anonymize, normalize, and structure 10+ years of educational data, ensuring usability for research.
- Led weekly progress meetings with supervising faculties, effectively managing workloads and ensuring alignment on objectives.
- Developed secure data handling protocols to safeguard sensitive records, enforcing compliance with human research guidelines.

PROJECTS

Incident Response Product, a Web Application Development Project, CMU

January 2024 – May 2024

TypeScript, Node.js, React, Docker, TypeORM, MySQL, Swagger, SonarQube, ESLint

- Contributed as lead Software Engineer in a team of 25 using **LeSS (Large Scale Scrum)**, developing a TypeScript-based backend with Node.js, TypeORM (MySQL), and React frontend to power a mobile emergency response platform for first responders.
- Containerized the application using **Docker** and integrated **SonarQube** & ESLint into CI, ensuring scalable deployments, automated code quality enforcement, and security checks across environments.

DDoS Attack Analysis and Detection, a Network Forensics Project, CMU

August 2023 – December 2023

Python, TCP/IP, hping3, Wireshark, SNORT, Raspberry Pi

- Conducted network forensics on a DDoS attack simulation, executing a **TCP SYN flood** on an IoT device via hping3, analyzing packet flows with Wireshark, and using SNORT for real-time intrusion detection and mitigation on a Raspberry Pi.