

# BOYANG LIU

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## EDUCATION

### NORTHEASTERN UNIVERSITY

Master of Science in CS Align

Jan. 2023 - Dec. 2025

Seattle, WA

### NORTH CHINA ELECTRIC POWER UNIVERSITY

Bachelor of Science in Electrical Engineering

Sep. 2016 - Jun. 2020

Beijing, China

## SKILLS

**Programming Languages:** Java, Python, C/C++, JavaScript, TypeScript, HTML/CSS, SQL  
**Development & Tools:** React, Node.js, MySQL, MongoDB, Pytorch, Docker, Git

## WORK EXPERIENCE

### Full-stack Software Intern - KeelWorks Foundation

May 2024 - Current

- Led a 4-person back-end team in developing **KeelHub**, a full-stack application managing 300+ volunteers and tracking internal projects, utilizing **Agile methodology**. Oversaw sprint planning, daily stand-ups, and retrospectives, facilitating seamless collaboration between back-end, front-end, and DevOps teams to deliver a robust volunteer management solution.
- Designed and optimized **MySQL** database schema, leveraging **Sequelize ORM** in Node.js for efficient data management. Implemented **synchronous/asynchronous query processing**, ensuring uninterrupted workflows and improving resource utilization by **30%**.
- Architected a scalable backend using **Node.js** and **Express.js**, implementing **RESTful APIs** with role-based access control, **rate limiting** for enhanced security, and efficient **caching strategies** to optimize performance and reduce server load.
- Developed a responsive, role-based front-end using **React** and **Tailwind CSS**, creating intuitive interfaces and a series of admin dashboards that collectively reduced administrative overhead by **40%**.
- Implemented robust testing strategies including **unit tests** with Jest, **integration tests** for API endpoints, and **end-to-end tests** using Cypress, achieving **95%** test coverage and significantly reducing bug incidents in production.

## PROJECTS

### Password Manager(Node.js, Python, MongoDB, AWS)

Jan 2024 - May 2024

- Developed a secure password manager using **React** for the front-end and **Node.js** with **MongoDB Atlas** for the back-end.
- Implemented user authentication, authorization, and password encryption, allowing users to generate, store, and share passwords.
- Enabled password sharing with acceptance and revocation options for enhanced security. Deployed the application on **AWS EC2** for scalable and reliable hosting.

### Online Payment Platform(React, JS, Python, Docker, AWS)

Sep 2023 - Dec 2023

- Led a team of 3 developers to develop a full-stack financial web app; features including real-time transaction initiation, detailed transaction history viewing, and personalized account management, etc.
- Implemented front-end UI reusable components including login form, and personal financial portal using **React**, **JavaScript**, and **Bootstrap**.
- Spearheaded the integration of a comprehensive financial overview dashboard, enabling users to monitor balances, and transactions, and generate reports.
- Designed **REST API** & data modeling, and developed back-end business logic using **FAST API** and **Python**; Conducted financial data CRUD operation using **SQLite3**; Deployed application using **AWS ECR**, **AWS EC2** and **Docker**.