

## Education

### Duke University, Master of Engineering

Jan 2022 - Dec 2023

Artificial Intelligence and Robotics

GPA 3.9

Courses: Data Structures and Algorithm, Software Engineering, Data Science & Machine Learning Application

### University of Pittsburgh, B.S.

Aug 2017 - May 2021

Mechanical Engineering

## Skills

**Programming Language:** Java, C, C++, Python, HTML, SQL, JavaScript, TypeScript

**Framework & Technology:** Spring, Redis, MySQL, React, Hibernate, Flask, Kafka, AWS ECS, ExpressJS, Redux

**Developer Tools:** IntelliJ, CLion, Eclipse, Visual Studio C++, Postman, Git, Visual Studio Code, Github, Docker Hub

## Work Experience

### Software Development Engineer, Fiserv (Berkeley Heights, New Jersey)

Jun 2024 - Present

- Designed and maintained a full stack bank account management web application for both customer and administration side with React for frontend and Express.js and Spring framework for backend.
- Implemented API gateways together with corresponding DTOs, request and response mappers to link APIs under different servers to create API wrapper classes.
- Managed user sessions with session expiration policies and secure cookie storage using Spring's session and cookie APIs. Used WSClient and Apache Kafka to perform API calls and handle responses asynchronously.
- Utilized Redux to create reusable objects that can be shared across different components and actions to manage state of the reducers, and introduced Redux-Thunk to create middlewares that dealt with synchronous actions.
- Introduced useContext hook to avoid prop drilling while improving state management and global data access.
- Developed core components using OOD principles, including classes, inheritance, and interfaces, ensuring efficient and reusable code. Implemented OOD design patterns to enhance system scalability and flexibility.
- Designed and implemented a centralized error handling system in React, utilizing custom Error Boundaries and the Context API to manage rendering and unhandled async errors consistently.
- Developed the front end of the application referring to Figma and integrated Axios to handle not only all RESTful services but also Authorization and Content-Type of requests and responses.

### Software Engineer Internship, Nanolumens (Peachtree Corners, Georgia)

Jun 2023 - Aug 2023

- Designed and implemented a full stack warehouse management system using Spring Boot and React to achieve efficient database CRUD operation and realized authorization checks for different users.
- Stored JWT token in local storage to persist login and added in api header to maintain security of api requests.
- Used Hibernate as the communication and managing tools between back-end and database.
- Introduced AWS S3 database to store various types of data such as pictures and PDFs.
- Realized asynchronous message notification for certain operations on databases through RabbitMQ message broker and Spring mail service.
- Implemented Redis for caching to improve performance and utilized Redis to realize session management.

### Software Engineer Internship, GoValley (Remote)

Jun 2022 - Aug 2022

- Developed an online shopping e-commerce application using Spring Boot, Spring MVC, MySQL and React.
- Implemented server-side REST APIs, such as user profile service, commodity service, commodity category service, and shopping cart service using Spring MVC, Spring Security and Hibernate.
- Used Spring AOP to monitor applications, JWT token for authentication, and Maven to manage dependencies.

### Software Engineer Internship, Yisen Tech (Remote)

Sep 2021 - Nov 2021

- Developed a full stack web application to manage patient records using Python, React and MySQL.
- Developed a data parsing function in MySQL to transform and consolidate data from multiple input files.
- Developed Python backend APIs and integrated Flask's SQLAlchemy extension to realize CRUD functionality.
- Implemented CI/CD by pushing the Docker image to AWS ECR and App Runner to execute the application.

## Projects

### Cloud-Based Photo Management Web App

Feb 2025 - Present

(AWS S3, AWS DynamoDB, AWS API Gateway, AWS Lambda, React, Redux, Google OAuth)

- Developed a full-stack web application with user authentication, enabling CRUD operations on photos, image resizing, visualizing visited locations, and displaying images in a lazy-loading gallery.
- Realized user authentication, role-based access control for admins and regular users with Google OAuth 2.0.
- Developed AWS Lambda functions to process image requests and utilized AWS API Gateway to route requests from the React frontend to achieve user-specific database operations on AWS S3 and AWS DynamoDB.
- Developed sharable lazy loading gallery component in React, optimizing initial load times and memory usage.