

# Jiayu Liu

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## EDUCATION

### New York University

Master of Science in Computer Engineering, GPA 3.7/4.0

Sept. 2022-May 2024

New York City, NY

- **Courses:** Internet Architecture and Protocol, Data Structure and Algorithms, Computer Systems Architecture, Machine Learning, Real Time Embedded Systems, Principle of database systems

### Boise State University

Bachelor of Science in Computer Science, GPA 3.7/4.0

Aug. 2018-May 2022

Boise, ID

- **Courses:** Data Structures, Design and Analysis of Algorithms, Agile Development, Operating Systems, Linear Algebra

## TECHNICAL SKILLS

- **Languages:** Java, JavaScript/Typescript, Python, SQL
- **Frameworks:** Spring Boot, Nest.js, Express.js, Django
- **Tools & Platforms:** Docker, Git, Heroku, Postman, Maven, Redis, AWS, MySQL, PostgreSQL, Terraform
- **Miscellaneous:** IntelliJ, VS Code, Rest API, Oracle Data Modeler, Jira

## WORK EXPERIENCE

### Ra Labs

Software Engineer Intern

May 2023-Aug. 2023

New York City, NY

- Executed end-to-end development and deployment of ~5 **Solidity** smart contracts with **TypeScript** for user-listing, transactions, and Ethereum payments in a data trading SaaS product.
- Designed and built **Nest.js RESTful API** with TypeORM for CRUD operations on off-chain user information stored persistently in a PostgreSQL Docker image.
- Conducted unit tests for smart contracts and the Nest.js backend services with **Jest**, achieving 90% and 87% coverage respectively.
- Integrated **Swagger** documentation accessed over 100+ times in the team for in-browser API testing.
- Implemented **React** front-end with **Redux** for state management across 20+ components, improving the overall usability of the UI.

## PROJECTS

### Vercel Clone

GitHub: <https://github.com/jLiucoder/nova-vercelClone>

Dec. 2023-Feb. 2024

- Automated the workflow for deploying static sites by enabling users to paste their GitHub repository link, simplifying the build and deployment process.
- Built a Vercel clone with **Express.js**, utilizing **AWS ECS** and Fargate for container management, **S3** for storage, and hosted Upstash **Redis** for pub/sub log streaming from container to backend, then to frontend via **WebSocket** for log delivery.
- Utilized **Terraform** to spin up all needed AWS and Upstash services in one go, ensuring the reproducibility of the infrastructure.

### Multi-user One-room Chat App

GitHub link: <https://github.com/jLiucoder/oneRoomChat-remake>

Oct. 2023-Dec. 2023

- Implemented a multi-user single room real-time chat app using **React** with **Redux**, Tailwind CSS and **WebSocket**.
- Utilized **Spring Boot** with **Spring Data JPA** to ensure efficient server-side operations, implemented **JWT** for secure user authorization.
- Integrated **Redis** as a caching layer to cache messages and used ZSet data structure to count top active users.
- Incorporated **Apache Kafka** as the message queue for asynchronous data processing, to ensure scalability and reliability of the application.

### Amusement Park Web App

GitHub link: <https://github.com/jLiucoder/amusementpark>

Jan. 2023-May 2023

- Designed a 10-entity database schema using **Oracle Database Modeler** for an amusement park e-commerce website.
- Enhanced data operations with SQL **triggers** to autonomously enforce business logic, **indexes** for search efficiency, and **transactions** for data consistency.
- Built **Django** web app with Django's ORM enabling essential CRUD functionalities such as user and shopping cart management.

### New Hire Onboarding Application

Undergrad Capstone Project with Micron Technology

Jan. 2022-May 2022

- Created a new hires' training platform with **Angular** for the frontend, **C#** for the backend and **MongoDB** for the database.
- Employed **Selenium WebDriver** for front end automated testing and **Postman** to test the endpoints.