

# Jiayu Liu

▪ Jersey City, NJ ▪ j113683@nyu.edu ▪ <https://www.linkedin.com/in/jiayu-liu-023902204/>

## EDUCATION

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### New York University

Master of Science in Computer Engineering, GPA 3.6/4.0

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

## WORK EXPERIENCE

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### Ra Labs

Software Engineer Intern

May 2023-Aug. 2023

New York City, NY

- Created and deployed ~5 smart contracts using **Solidity/TypeScript** enabling key feature including user-listing, transactions and real-time Ethereum payments.
- 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 of smart contracts and the Nest.js backend services with **Jest**, achieving 90% and 87% coverage respectively. Integrated **Swagger** docs 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.
- Deployed the full stack QA app through Render with 99% uptime over a month, with hosted Redis and PostgreSQL instances.

### Boise State University

Undergraduate Research Assistant

Jan. 2021-Jan. 2022

Boise, ID

- Classified over 500 nanostructure images taken from atomic force microscopy.

## PROJECTS

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### Multi-user One Room Chat App

Personal Project

Dec. 2023

New York City, NY

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

### Amusement Park Web App

Principles of Database Systems in-class Final project

Jan. 2023-May 2023

New York City, NY

- Designed a 10-entity database schema using **Oracle Database Modeler** for an amusement park e-commerce website.
- Built **Django** app with Django's ORM enabling essential functionalities such as CRUD operations, user, and shopping cart management.

### New Hire Onboarding Application

Capstone Project with Micron Technology

Jan. 2022-May 2022

Boise, ID

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

## TECHNICAL SKILLS

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