Jiayu Liu

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New York University   *Sept. 2022-May 2024*
Master of Science in Computer Engineering, GPA 3.6/4.0   *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

- **Scholarships and awards**: Yearly Merit Scholarship for two consecutive years starting from Fall 2022

Boise State University   *Aug. 2018-May 2022*
Bachelor of Science in Computer Science, GPA 3.7/4.0   *Boise, ID*

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

- **Scholarships and awards**: Dean's List with Honors: Spring 2020, Fall 2020, Spring 2021, Fall 2021
  Yearly GEM Scholarship for four consecutive years starting from Fall 2018

TECHNICAL SKILLS

- **Languages:** Java, JavaScript/Typescript, Python, C, SQL

- **Frameworks**: Nest.js, Django, Spring Boot

- **Tools**: Docker, Git, Heroku, Postman

- **Miscellaneous**: IntelliJ, VS Code, Rest API, Linux

WORK EXPERIENCE

Ra Labs   *May 2023-Aug. 2023*
Software Engineer Intern   *New York City, NY*

- Created and deployed several smart contracts for a hybrid Web3 data marketplace platform, incorporating Solidity and TypeScript for contract development and connectivity, incorporated functionalities such as on-chain user listings, a streamlined purchase flow, and real-time Ethereum transactions.
- Conducted unit tests of smart contracts using ether.js and the Hardhat testing framework and E2E tests for the Nest.js backend services.
- Built a RESTful API with TypeORM and Nest.js for CRUD operations on off-chain user profiles. Included Role Based Authorization in the controller layer for access control. Stored data persistently in a PostgreSQL Docker image and integrated Swagger for easy in-browser endpoint testing and documentation.
- Implemented some user interfaces components using React with Redux for state management, improving the overall usability of the platform.
- Deployed the full stack web app for QA/MVP environment through Render, with hosted Redis and PostgreSQL instances.

PROJECT/RESEARCH

Amusement Park Web App   *Jan. 2023-May 2023*
Principles of Database Systems in-class Final project   *New York City, NY*

- Lead a team of three to analyze product requirements and design a scalable database system for an amusement park themed e-commerce website using Oracle Database Modeler with around 25 entities.
- Implemented the designed database system into a web application using Django, enabling essential functionalities such as CRUD operations, user sign-in/sign-up, and shopping cart management.
- Utilized Django's ORM to ensure efficient data management and retrieval, optimizing the performance of the web application.
- Implemented secure authentication and authorization mechanisms for user management, leveraging Django's built-in authentication system.

New Hire Onboarding Application   *Jan. 2022-May 2022*
Sponsored Capstone Project with Micron Technology   *Boise, ID*

- Utilized Angular with bootstrap for the frontend, ASP.NET for the backend, and MongoDB for the database to create a comprehensive, user-friendly new hires' training platform.
- Implemented CRUD functionalities for various training modules and established role-based access control for different users, ensuring that users had access only to the modules assigned to them.
- Utilized a test-driven development process with Unit and Integration testing and employed Selenium WebDriver to test the frontend and Postman to test endpoints.

Joint Research Project between Boise State University & University of Wisconsin-Madison   *Jan.2021-Jan.2022*
Undergraduate Research Technician of Informatics Skunkworks   *Boise, ID*

- Improved image classification accuracy from 90% to 97% and reduced classification time by 20%.
- Classified over 500 nanostructure images taken from atomic force microscopy.
- Using built-in MATLAB functionalities to replicate the experiment in papers in microscopic image detection.
- Attended the progress workshop and presented semester-long progress slides to BSU and UW-Madison researching teams.