Zipeng Zhu

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EDUCATION

University of California, Riverside

Bachelor of Science, Computer Science *September 2021 - December 2023*

- Relevant coursework:
  Data Structure and Algorithm, Software Development, Database Management System, Artificial Intelligence, System Design, Software Testing and Verification, Web Development

University of California, Riverside

Master of Science, Data Science *January 2025 - Expected December 2026*

PROJECTS

The Forum Web: Comment Management Tool —*Angular, SpringBoot, MySQL, REST APIs*

- Designed and developed a full-stack forum web application for managing user content efficiently.
- Integrated **Angular** for the frontend and **SpringBoot** for backend services, with **MySQL** as the relational database.
- Applied optimized **SQL** queries and designed a normalized database schema to ensure data integrity. Utilized **Spring Data JPA** for seamless database interaction, reducing query execution time by 25%.
- Implemented **WebSocket** communication with **Angular**'s **RxJS** to enable real-time updates, improving the app's responsiveness.

PortFlow: Intelligent Container Handling System —*React, Python, Flask,Websocket*

- Developed **PortFlow**, a software solution to manage container operations at ports, enabling fast and efficient loading/unloading between ships and docks.
- Built a user-friendly frontend using **React**, providing a clear interface for easy interaction.
- Established a backend with **Python** and **Flask** for real-time data handling and container tracking.
- Integrated **A-star algorithms** to optimize container movement routes, reducing operational time.
- Added a ship balancing system to maintain weight distribution for safer transport.

ChatWeb: Real-Time Messaging Application — *React, Node.js, Socket.IO, MongoDB, Express*

- Design the development of ChatBox, a real-time messaging app inspired by platforms like WhatsApp and Slack, using **React** and **Node.js**.
- Built features for user authentication and instant messaging with **React** and **Socket.IO**.
- Secured data with **MongoDB** and encryption, enabling safe multimedia sharing.
- Enhanced user experience with delivery/read receipts and push notifications.
- Utilized **WebSocket** for fast and reliable real-time communication.

COMMUNITY & LEADERSHIP

- **Student Mentor and Event Organizer** September 2021 – Present
  UCR CSSA

  - Helped new students adjust to university life by organizing fun and engaging events.
  - Created a welcoming environment for students to connect and make friends.
  - Provided useful information and guidance to help students navigate campus life and access resources.

TECHNICAL SKILLS

Programming Languages: Java, Python, C++, JavaScript, TypeScript, SQL

Web Development: HTML, CSS, Bootstrap, React.js, Node.js, Express, Flask, Spring Boot

Database Management: MongoDB, PostgreSQL, MySQL

Tools & Platforms: Git, GitHub, Visual Studio Code, IntelliJ IDEA, Linux, MacOS

Methodologies: Agile, RESTful API Development, Unit Testing

Office Software: Google Workspace, Microsoft Office, LaTeX