Shaolong Li

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Education

University of California, San Diego   **Expected June 2025**
Master of Science in Computer Science   *GPA:3.88*

University of California, San Diego   **September 2019 – March 2023**
Bachelor of Science in Cognitive Science(w/Machine Learning), Computer Science Minor   *GPA:3.86/Major 3.97/Minor 3.9*

Experience

METY Tech   **June 2024 – September 2024**
Software Engineer   *San Diego, CA*
- Designed and implemented a referral-based discount system, designed database structures and backend logic for promo code validation, discount application, and influencer payment tracking.
- Optimized the **Django** back-end API services for user health plan functionality, reducing API call response time and improving platform efficiency by 30%, while fixing various front-end issues with **React** to enhance **UI/UX**.
- Implemented **CI/CD** pipelines to support agile development, ensuring rapid deployment and continuous integration.

UCSD TripleC   **February 2023 – December 2023**
Software Engineer   *San Diego, CA*
- Developed and tested back-end **RESTful** API services using the **Spring** Framework, integrating unit testing with **JUnit** and Mockito to ensure robustness and reliability of API functionalities
- Implemented JWT-based authentication for the mobile app using **Spring Security** with Auth0's SDK, enhancing user data security and enabling seamless sign-ins without repeated credential entry.
- Developed highly scalable and reusable components using **React-Native** with hooks, improved the team development efficiency by over 50%.

University of California San Diego   **January 2022 – March 2023**
Instructional Assistant   *San Diego, CA*
- Worked with other IAs to develop a framework for teaching the implementation of **advanced data structures** using **C++**. Held weekly lab hours, dedicating **25** hours per week, to help students with their programming assignments.
- Participated in lectures to support the instruction of **Unsupervised Machine Learning Algorithms**. Graded homework, and conducted weekly live discussion sessions to aid students in comprehending complex concepts presented in lectures.

Projects

BlogApp | *React, Node.js, Express.js, MongoDB, Redux, Redis, Docker*
- Designed and implemented a **RESTful API** service using **Node.js** and **Express.js** to handle **CRUD** operations on a **MongoDB** database.
- Developed dynamic webpages with **React**, **Tailwind CSS**, and **Flowbite**, enabling users to publish, modify, like, and comment on posts. Created a comprehensive admin dashboard for monitoring blog activity and managing posts, comments, and user accounts.
- Integrated secure authentication with **JWT** and **Google OAuth** for seamless signup and login. Utilized **Redux Toolkit** for efficient state management and **Firebase** for image hosting.
- Containerized the application using **Docker** to ensure consistent environment configurations, and simplify deployment across different platforms.

Custom Autodiff Framework | *Python, Scikit-learn, Transformer, ML System*
- Developed a custom Automatic Differentiation framework from scratch in **Python**. Implemented core operators in a fused fashion to optimize both forward pass computations and backward pass gradient calculations.
- Leveraged the custom Automatic Differentiation library to implement and train a **Transformer** model using the **MNIST** dataset, achieving an **87%** test accuracy.

XML Database Query Engine | *Java, XQuery, ANTLR 4, Database System*
- Developed an XQuery processor using **Java** and **ANTLR 4**, which parses and executes complex **XQuery** expressions to query XML databases.
- Implemented an efficient XQuery evaluation engine using a hash join algorithm, enabling efficient data retrieval from **XML** databases and compliant with W3C DOM standards.

Technical Skills

Languages: Python, Java, C++, HTML/CSS, JavaScript, SQL, GraphQL, Haskell, Golang
Database: Relational(MySQL, PostgreSQL), NoSQL(MongoDB)
Frameworks: Django, Spring Boot, React.js, Redux, Recoil, Node.js, Express.js, Vue.js, Nest.js, Tailwind CSS