

Tianxiang Ren

 [github](#)  [portfolio](#)  [linkedin](#)  rentxiang@gmail.com  781-627-6128

EDUCATION

Northeastern University

Boston, MA

Master of Science in Computer Software Engineering, GPA: 3.64/4.0

Expected Dec 2023

Graduate Teaching Assistant for course INFO6205-Program Structure and Algorithms

Relevant Courseworks: Concepts of Object-Oriented Design, Web Design and User Experience Engineering, Program Structure and Algorithms, Advanced Data Science and Architecture, Smart Contract Automation

Hefei University of technology

Hefei, China

Bachelor of Engineering in Mechanical Engineering

Jun 2021

SKILLS

Languages: Python, Java, JavaScript/TypeScript, HTML/CSS, C/C++ \LaTeX

Tools & frameworks: React, Node.js, Next.js, Webpack, SpringBoot, Flask, Django, Docker, Git/github

Databases: SQLite, Sequelize, SQLAlchemy, Postgres, MySQL, MongoDB

EXPERIENCE

Software Engineer Intern

May - Aug 2023

TRACT

San Francisco, CA

- Developed the website of TRACT with **TypeScript**, **React** and Material UI, optimized the website's frontend codebase and improved website load times by 25% through optimizing image loading and lazy loading techniques
- Leveraged React components, managed state using **Redux**, and utilized **Axios** for API calls. Employed CSS modules for styling to ensure modularity and avoid conflicts
- Collaborated with the backend team to design robust user authentication and authorization mechanisms, integrated **OAuth2** and **JWT** for secure user login and access, implemented role-based access control (RBAC) to enforce permissions, observed an impressive 40% reduction in unauthorized access attempts
- Worked alongside designers and other teams to translate design updates into functional UI components. Collaborated on UI/UX discussions, contributing insights on design feasibility and user interactions
- Conducted unit and integration testing using **Jest** and React Testing Library to ensure accurate functionality
- Setup **CI/CD** pipelines using GitHub Actions, resulting in faster deployment cycles and improved software robustness
- Utilized **AWS EC2** for hosting and **Nginx** as a reverse proxy server, ensuring seamless deployment and accessibility

Software Engineer Intern

Jun - Aug 2020

Sichuan TIANYUAN Machinery Engineering Co., Ltd.

Guangyuan, China

- Developed featured APIs for the company that includes authentication, CRUD operations, validation, and documentation, utilized **FastAPI** to design and create API endpoints, focusing on **RESTful** principles and proper error handling
- Integrate FastAPI with **PostgreSQL**, implementing efficient data storage, retrieval, and manipulation using **SQLAlchemy** and Pydantic models, especially improved Vote/Like system that increased time performance up to 13%
- Deployed the FastAPI API on Heroku using Docker and Ubuntu, containerized the API, ensuring scalability, availability, and optimal performance in a production environment
- Setup and maintained a streamlined CI/CD pipeline that automates testing, ensures code quality, and facilitates continuous deployment

PROJECTS

MovieProx - MERN Full-stack React App | *Javascript, React, Node.js, MongoDB Atlas, Axios*

May 2023

- Built a responsive Netflix-like website built with MERN (MongoDB, Express, React, Node.js) stack and the Themoviedb API. Users can sign up, search movies, TVs and people, add movies to favorite list, write reviews
- Developed REST APIs with Express and make API calls to the Themoviedb API by deploying Axios clients
- Designed responsive and modern web pages with React, Material UI, SwiperJS, Formik and Yup
- Provided user authentication and protection with JWT and Express Validator, deployed the application on Vercel and host the database on MongoDB Atlas for cloud storage

ShopEase - Mobile Application with Typescript and React Native | *React Native, TypeScript, Firebase*

Mar 2023

- Developed a robust cross-platform mobile application using React Native and TypeScript for a seamless shopping experience on both iOS and Android devices
- Implemented Firebase Authentication SDK to allow users to securely sign up and log in using email/password or OAuth-based social authentication (e.g., wechat, weibo)
- Optimized Search Functionality by applying debouncing in TypeScript to enhance search responsiveness, reducing API calls and improving the overall search interaction by 13%

NexusFlow - Microservice Architecture and System Design | *Python, MySql, Docker, Kubernetes*

Jan 2023

- Developed a comprehensive microservice architecture with a focus on scalability, fault tolerance, and efficient system management
- Developed Docker containers for microservices and orchestrated them using Kubernetes, streamlining deployment and optimizing resource utilization
- Integrated MySQL, MongoDB, and RabbitMQ, optimizing data storage, retrieval, and communication between microservices
- Implemented RabbitMQ as a message queue to facilitate communication between microservices, ensuring real-time updates and event-driven processing