Tianxiang Ren

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EDUCATION

Northeastern University — Boston, MA
Master of Science in Information Systems, GPA: 3.64/4.0 — *Expected Dec 2023*
Graduate Teaching Assistant for course INFO6205-Program Structure and Algorithms

Hefei University of technology — Hefei, China
Bachelor of Engineering in Mechanical Engineering — *Jun 2021*

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

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
- Utilized **AWS EC2** instances to host the website 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 an internal management application aimed at streamlining company processes and data management using **Python** and **Flask**
- Designed a user registration, login, and permission management system, implementing password hashing using Flask-Login and Werkzeug, improved data security and privacy protection
- Implemented robust CRUD operations and established seamless connections to **MySQL** databases, resulting in efficient handling of data management and 30% reduction in processing time

PROJECTS

MovieProx | *Javascript, React, Node.js, MongoDB Altas, Axios* — May 2023

- Built a responsive Nextflix-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

Australian Vanguard Eye | *Python, Numpy, Pandas, Scikit-learn, Matplotlib* — Mar 2023

- Analyzed ten years of daily weather observations from numerous locations throughout Australia and utilized various machine learning and deep learning algorithms to forecast whether it will rain tomorrow
- Conducted comprehensive data preprocessing, including handling missing values, removing outliers. Leveraged Pandas for data manipulation, and utilized Seaborn and Matplotlib for data visualization
- Trained and evaluated three models, namely Neural Network, Decision Tree, and KNN, using Scikit-learn libraries. Conducted hyperparameter optimization to enhance model performance, achieving an impressive average accuracy of 84%

Trollo | *Java, Node.js, React, Redux, Spring Boot, MySQL* — Jan 2023

- Built a Trello alike application that utilizes Kanban boards (which represent projects), cards (which represent tasks), and lists (which tracks the statuses of different projects) to move tasks or organize the resource materials in real-time
- Developed backend REST APIs with Spring Boot 2.0 for CRUD operations on MySQL, secured by Spring Security and JWT. Built a web frontend with React and Bootstrap and used Redux to manage the state of the application. Deployed the application into Heroku's free tier