

Tianxiu Zhou

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Education

- **Texas A&M University**, Master of Computer Science Aug 2023 – Expected May 2025
- **Tsinghua University**, Bachelor of Biological Science Aug 2019 – Jun 2023

Skills

- **Frontend Development:** React.js, React Native, Next.js, TailwindCSS, TypeScript, JavaScript, CSS, HTML, Redux
- **Backend Development:** .NET, FastAPI, Django, Flask, Spring Boot, Node.js, Express.js, MySQL, Redis, AWS
- **Professional Development Tools:** Git, Docker, CI/CD, Postman, Swagger, Apache, Nginx, Apache Kafka
- **Programming Languages:** TypeScript, JavaScript, C#, Python, Java, SQL, HTML, CSS
- **Data Science and Machine Learning:** PyTorch, Pandas, Numpy, Reinforcement Learning, D3.js, Matplotlib

Experience

- **Software Development Intern** | Advanced Mobile Automated Regression Testing Paycom LLC.
.NET, Docker, GitLab, MySQL, TypeScript, React.js May 2024 – Aug 2024
 - Collaboratively designed a system for automating UI regression tests on remote mobile devices.
 - Developed a .NET Core backend application with the MySQL database to provide a RESTful API for managing test scripts, scheduling and dispatching testing jobs to mobile devices, and persisting test execution results.
 - Implemented dependency injection and the repository pattern in the .NET Core backend project. Implemented unit tests with xUnit and Moq to achieve a full test coverage.
 - Set up GitLab CI pipelines to automatically perform unit testing and linting upon merge requests.
 - Built an SPA frontend for visualizing test scripts, testing jobs and results with React.js and an internal UI library.
 - Containerized the .NET Core backend using Docker and integrated the frontend SPA with Docker multi-stage building.
 - Awarded as one of the MVPs of the Software Development Internship program.
- **Research Assistant** | Digital Twin-Based Smart City & Smart Construction Platform Texas A&M Univ.
TypeScript, Next.js, React Native, TailwindCSS, FastAPI, Apache Kafka, Redis, AWS Nov 2023 – May 2024
 - Built a FastAPI based Python backend to perform domain specific data analysis and provide a RESTful API.
 - Developed a queuing system with Apache Kafka and Redis to asynchronously process data from different sources and persist results in AWS DynamoDB.
 - Built both a data visualizing website and an admin's dashboard with TypeScript, Next.js and TailwindCSS.
 - Developed a cross-platform mobile app for data visualization with TypeScript and React Native. Created a performant plotting library with React Native Skia and D3.js for making highly customized charts.
 - Deployed the backend and frontend apps with AWS services including ECS, S3, CloudFront, Route53 and Amplify.
 - Set up CI/CD pipelines with AWS CodeCommit, CodeBuild and CodeDeploy for automatic testing and deployment.
- **Research Assistant** | cfOmics: Multi-Omics Liquid Biopsy Database and Website 🌐 Tsinghua Univ.
React.js, Django, MySQL, Docker, Apache Mar 2022 – Jul 2023
 - Developed a full stack website providing visualization and analytical tools for bioinformatics researchers.
 - Built a multi-page frontend with React.js and Bootstrap 5. Implemented client-side routing with React Router Dom.
 - Built a Django backend with the MySQL database to perform analysis and provide a RESTful API.
 - Containerized the frontend and backend services using Docker Compose and deployed on a CentOS server.
- **Bachelor's Thesis Project** | Network Dissection of a DQN Agent Playing Super Mario Bros 🌐 Tsinghua Univ.
PyTorch, Deep Reinforcement Learning, OpenAI Gym, Numpy Feb 2023 – Jun 2023
 - Implemented the double DQN algorithm with PyTorch to train a reinforcement learning agent to beat Super Mario Bros.
 - Fine-tuned a semantic segmentation model for segmenting in-game scenes to generate training dataset for the DQN agent, based on DeepLab V3 ResNet-50.
 - Examined the correlation between activation of neurons in the DQN network and objects in the input scenes, in an effort to investigate the mechanism of neuron function generation.