Rachel (Hao) Tan

Philadelphia, PA | (445)-260-7227 | tanhaosmail@gmail.com | Github | linkedin.com/in/tan-hao

Education

University of Pennsylvania 08/2023 – 05/2025

MSc, Computer and Information Technology - GPA: 3.8/4.0 Philadelphia, PA

- Teaching Assistant: CIT590 Programming Languages and Techniques (Python & Java)
- Awards: Winner @ Penn Hackathon 2024, Best Hack @ FemmeHack 2024

Technical Skills

- **Programming Languages**: Python, Java, C/C++, JavaScript/TypeScript, SQL, Swift (iOS development)
- **Front-End Development**: React.js, Next.js, Vue.js, Bootstrap, Tailwind CSS, Figma, REST APIs, Redux
- **Back-End Development**: Node.js, Express.js, Flask, Django, Spring Boot, Hibernate, OAuth authentication
- **Databases & Data Processing**: MySQL, PostgreSQL, MongoDB, Redis, Celery, Apache Kafka, Tableau
- **Cloud & DevOps**: AWS, Azure, Google Cloud, Docker, Kubernetes, Terraform, Jenkins, GitHub Actions, CI/CD
- **Tools & Platforms**: Git, npm/yarn, Linux, Bash, PowerShell, Jira, Maven, Gradle, Postman, Selenium, Mockito

Work Experience

Deloitte | Deloitte Digitals 07/2024 – 09/2024

AI Solutions Software Engineer Intern

- Developed customized LLM-integrated AI Agent platforms for clients like BMW and Marriott, using Java with Spring Boot for backend services and Python with Django for handling complex logic. Integrated the OpenAI API for AI-driven solutions and built interactive front-end interfaces using Next.js and TypeScript to enhance client engagement.
- Constructed custom knowledge bases using Retrieval-Augmented Generation (RAG), MySQL, Elasticsearch, and Milvus, enabling real-time data retrieval via natural language queries, decision-making speed and operational efficiency for clients.
- Implemented real-time monitoring and automated recovery systems on Linux servers using Grafana, Prometheus, Ansible, and Bash scripts, overseeing critical dependencies and reducing system downtime by 25%.
- Optimized AWS-deployed AI models by developing Python scripts to identify performance bottlenecks and implementing multithreading, boosting token generation speed by 30%.

Liberty Mutual | Technology 01/2024 – 06/2024

Full-Stack Software Engineer Intern

- Developed a secure full-stack internal approval system using React.js for the frontend, Spring Boot for the backend, and PostgreSQL for the database, eliminating data leakage risks by replacing the original third-party tool.
- Enhanced the company's data masking system by implementing and deploying a Named Entity Recognition (NER) model to handle unstructured natural language data, ensuring compliance with legal privacy standards.
- Collaborated with Data Scientists in an Agile environment, building 10+ REST APIs to integrate machine learning models (dog face recognition) for automating fraud detection in pet insurance claims, cutting pet verification labor costs by 63%.

The Wharton School | AI & Analytics Accelerator 08/2023 – 12/2023

Digital Transformation Engineer at Penn Museum

- Built data pipelines using Python and SQL scripts to automate the digitization and archival process of artifacts into the museum database, reducing manual workflows by 50%. Automated data backups to ensure reliable data management.
- Collaborated with cross-functional teams to improve accessibility of digital cultural heritage to researchers and curators. Implemented automated testing suites with Selenium and Mockito, reducing regression testing time by 50%.

Selected Projects

Full-Stack OpenAI Image Generation App - Express.js | React.js | Node.js | Tailwind CSS | DALL·E API demo online

- Developed a full-stack MERN application that generates images from text inputs using OpenAI's DALL-E model.
- Built responsive UI with React.js and Tailwind CSS, and implemented image storage with Cloudinary for efficient management, enabling users to create unique visuals quickly

RaccoonTV: Full-Stack Netflix Clone - React.js | Redux Toolkit | Material-UI | AI Voice Assistant demo online

- Designed and built a Netflix-inspired React app with real-time data queried from external online database through comprehensive API calls, allowing users to browse movies by genre and category, watch trailers, and view cast details.
- Developed user authentication and profile management for personalized watchlists and favorites, featuring responsive front-end design across all devices, and implemented AI voice-controlled navigation for hands-free interaction.