Ying Tu

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Skills

Language	Python | Java | JavaScript | TypeScript | C | SQL | Unix/Linux Shell
Frameworks	Next.js | React.js | Node.js | Spring Boot | React Native | Android | Django | Flask | FastAPI
Databases	MySQL | PostgreSQL | MongoDB
Platforms/Softwares	AWS(EC2/S3/ELB/EBN), GCP(Cloud Storage/Pub Sub/Cloud Run), Firebase(Functions/Firestore), Docker
Tools	Jest | Cypress | Git | GitHub Actions | Postman | Restful API | GraphQL | TailwindCSS
Certifications	**AWS Cloud Practitioner**

Education

University of Southern California, U.S. — **Expected Dec. 2025**
Master of Science in Computer Science — **GPA: 4.0/4.0**

- Courses: Analysis of Algorithms, Operating Systems, Database Systems, Introduction to Programming System Design

National Taiwan University, Taiwan — **Jan. 2022**
Master of Science in Chemical Engineering — **GPA: 3.98/4.0**

National Taiwan University, Taiwan — **Jun. 2019**
Bachelor of Science in Chemical Engineering — **GPA: 3.95/4.0**

- Three times Academic Excellence Award (Top 5% students of the year)
- Courses: Computer Programming (A+)

Professional Experience

Appier — **Jun. 2024 - Expected Aug. 2024**
Frontend Engineer Intern

GBCS Group — **Feb. 2024 - May 2024**
Backend Developer Intern

- Engaged in **software development life cycle**, including project planning, customer requirement analysis, API design, documentation, QA, and maintenance
- Exposed mathematical equations for calculating lifetime greenhouse gas (**GHG**) emissions of vehicles as API endpoints using **Python FastAPI** backend framework
- Collaborated with research team to refine **40** equations, ensuring data integrity and smooth endpoint integration
- Led a backend team of **six** to consolidate documentation and related materials, facilitating communication within teams and with cross-functional teams
- Integrated backend GHG APIs with **three** frontend services, enabling seamless data exchange and display
- Identified strengths and weaknesses of GHG models by quantitative analysis of **422** endpoints across fleet modes and lifecycles

Selected Projects

Portfolio Website - yingtu35.github.io/ — **May. 2024**

- Decreased L**argest Contentful Paint** from **5s** to **1s** by optimizing responsive image sizes and format, and leveraging fetching priority and **lazy loading** on images
- Prevented unnecessary event handler execution with **debouncing** and **throttling**, improving resource usage and user experience
- Applied **responsive web design** with CSS media queries to let website adapt to various screen sizes and platforms

GitHub Issues Manager — **Mar. 2024**

- Crafted a GitHub issues management application using **Next.js** framework with **TypeScript** and **TailwindCSS**
- Used **OAuth 2.0** for secure user authentication and access authorization, leveraging **GitHub REST API** for issues management
- Enhanced page loading speed with **Server-side Rendering** and **Code Splitting** for better **SEO** performance
- Adopted skeleton loading to reduce bounce rate and **cumulative layout shift**, improving user experience

Mobile eBay Search App — **Dec. 2023**

- Developed a **Android mobile** application with **Java**, allowing users to search for eBay products and create a customized wishlist
- Familiarized with cloud services by deploying back-end server to **AWS Elastic Beanstalk** to serve HTTP requests
- Decoupled API requests from fragments for clean design and ease of maintenance, reducing development time by **25%**

YouTube Clone — **Sep. 2023**

- Engineered a serverless and scalable back-end system with **Google Cloud Platform** to manage up to **80** concurrent user requests.
- Deployed a video processing service that reduced video sizes by **90%**, enhancing storage efficiency and streaming performance.
- Employed server-side rendering techniques with **Next.js** to accelerate website loading times