



# Tsai, Tsai-Chieh 蔡采潔

## Full Stack Engineer

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## SUMMARY

I'm a self-taught full-stack engineer committed to producing clean and stable code. With a passion for technology, I continuously explore new developments and share my knowledge with others. Additionally, I strive to create harmonious work environments for all team members.

## SKILLS

### Backend

- NodeJS
- ExpressJS
- RESTful APIs
- Python
- FastAPI
- Nginx
- PM2
- MySQL
- PostgreSQL
- Sequelize ORM
- NoSQL
- Redis
- Linux
- Pug
- Web Crawling
- Firebase

### Cloud Service

- Azure DevOps
- AWS EC2
- AWS S3
- AWS CDN
- Google GCE
- Google GAE
- Google GCF

### Front-End

- Angular
- React
- Redux Toolkit
- RWD
- Bootstrap
- Ant Design
- Styled-components
- i18next
- Vitest

### Tool

- Git / GitHub
- SourceTree
- SonarQube
- Docker
- Typescript

### ESLint

- Artillery
- Cheerio
- AJV

### Others

- Matlab
- Unity

## WORK EXPERIENCE

### TSMC

Aug. 2023 - Now

#### IT DevOps Engineer

- Maintained backend logic and collaborated with IT/ECIM/PM teams to iterate on ambiguous feedback and improve system usability
- Mainly developed the frontend with Angular and managed state using NgRx, reducing IT's manual workload and minimizing errors through intuitive UI design (See Projects)

### Ever Fortune.AI

Jan 2021 - Aug. 2023

#### Software Engineer

- Built APIs with Python FastAPIs web framework, based on Pydantic type hints and Mypy type checker
- Self-learning and independent development with React and Typescript at a tight deadline (See Projects)

### Gets-info (Startup)

Nov 2019 - Nov 2020

#### Backend Engineer

- Database table design and maintenance, and completed more than 20 APIs about sports events, CRUD for multiple user predictions
- Scheduler for crawling sports information, etc (See Projects)

### AppWorks School

Jul 2019 - Oct 2019

#### Backend Trainee

- Built engineering mindset and problem-solving skills through 1000+ hours of immersive training and completed the personal project
- Enhanced communication skills through collaboration with Front-End and iOS members on «Stylish» (See Projects)
- Adopted Agile and Scrum Methodology on the personal project development to deliver features on time

## EDUCATION

### M.S. in Bioinformatics and Systems Biology

National Chiao Tung University

Sep 2016 - Aug 2018

- 4.1/4.3 GPA
- Main courses: «Machine Learning», «Image Processing»

### B.S. in Engineering and Computer Science

Feng Chia University

Sep 2012 - Jun 2016

- 3.8/4 GPA
- The Phi Tau Phi Scholastic Honor Society Honorary member
- Academic Excellence Award (top 5% of class in semester) four times

## PROJECTS

### Workflow management System (Frontend)

Could easily configure and manage complex workflows through a web interface, reducing manual effort and minimizing errors.

- Built UI with Ant Design, Material UI, and ag-grid-angular, using NgRx for state management to centralize workflow and enhance data visualization
- Developed a JSON/code editor with Monaco Editor to replace manual Postman operations and improve efficiency

### Query & Label System (Ever Fortune.AI 's project)

Data Engineering and Labeling Technology Applications.

- Familiar with search API with multiple queries based on **RESTful** designed, like aggregate function, having clause
- Implement the concept of microservices by **Docker** Compose, each project communicates via API gateway
- Connect Google OAuth 2.0 API for third-party login and **JWT** token for native login
- Using the **Alembic** toolkit for auto-generating database migrations
- Infrastructure testing using **Pytest** before deployments

### get-sport (company's project 搞運彩)

A platform that provides sports lottery analysis and predictions.

- Import **AJV** validation for input and redesign the project structure
- Chat room development with firebase realtime database
- Stable and clean code writing for APIs and scheduling
- Track and recover other senior engineers' errors and refactor code
- Supervisor fully trusted me to take control of the web-crawling server

GitHub: [sport-api](#), [sport-crawler](#)

### Never Stray (Side Project)

An animal adoption platform that integrated the shelters and meet map in Taiwan. Users can quickly find pets through multiple search conditions or track the pets they are interested in.

- Enabled consistent, portable, and scalable deployments with **Docker**
- Handled DB migration and setup with **TypeORM** scripts
- Integrated GitHub with **AWS CodeDeploy** for EC2 auto-deployment
- Used **Node-schedule** and **Cheerio** for scheduled web crawling and regular DB updates
- Centralized state management and simplified reducer creation using **Redux Toolkit**
- Simplified data fetching and caching with **RTK Query**
- Built responsive UI with **SCSS** and **styled-components**

URL: <https://never-stray-e15a5.web.app>

new Version: <https://pet-adoption-next.vercel.app>

GitHub: <https://github.com/TsaiTsaiChieh/never-stray>

More side projects: see the projects on my [portfolio](#) website

### Cross-Fab Status Variable Automation System

A configurable interface for building and collecting accurate process status data.

- Developed an automation system that reduced process status data collection time from one week to under one day, cutting 80% of the IT department's manual workload
- Mainly using Angular for frontend development with NgRx state management, while maintaining the backend to ensure system stability and maintainability

### Insurance administration system

Solely responsible for the front-end logic of all pages

- Effectively communicate with the backend and adjust the APIs based on previous backend experience
- Utilize Redux Toolkit for centralized state management and simplifying many common use cases
- Optimizing API requests with Redux Toolkit Query elevates user experience
- Passed the initial rounds of vulnerability scanning and code detection during the first scan

