Tong Jia

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EDUCATION

University of Southern California 09/2024 - 05/2026
Master of Science in Computer Engineering, GPA 3.67/4.0 Los Angeles, CA

University of California, Santa Cruz 09/2020 - 06/2024
Bachelor of Science in Computer Science, GPA 3.56/4.0 Santa Cruz, CA

TECHNICAL SKILLS

Programming Languages: Java, Python, JavaScript, SQL, Kotlin, C/C++, Go
Web Development: Spring Boot, Spring Data JDBC, React, Node.js, Express, HTML/CSS, PySide6, Android (MVVM), Retrofit, Jetpack Navigation, Ant Design
Database, Cloud and DevOps: PostgreSQL, Elasticsearch, AWS, Room, GCP, Docker, Kubernetes, Git, OpenAPI, LangChain

WORK EXPERIENCE

Software Engineer Intern, Centre Testing International Group Corporation (Remote) 05/2025 - 09/2025

- Built and deployed **web-based RAG** assistant for environmental lab reports, enabling analysts to upload PDFs and query about documents with page-level citations, cutting lookup time by 80%
- Engineered the retrieval pipeline with **LangChain** and **Deepseek-reasoner API** for document loading, splitting, retrieving and generating, added a **vector store** cache to reduce latency
- Designed frontend using **React**, **HTML/CSS,** and **Ant Design**, that improved user experience and UI performance
- Implemented RESTful APIs via **Node.js** and **Express**, optimized for high-performance request handling

Research Assistant, AIEA Lab, UC Santa Cruz (Santa Cruz, CA) 04/2023 - 05/2024

project: Autonomous Vehicle Incident Reports Analysis

- Collected and parsed over 1,000 autonomous vehicle incident reports from California DMV and NHTSA PDFs with **PyPDF2**
- Conducted extensive data cleaning and preprocessing using **Pandas** and **NumPy**, by dropping irrelevant information, encoding non-computable data, and applying normalization techniques
- Performed chi-square tests with **SciPy** to evaluate the association between categorical variables and vehicle types, then utilized **Matplotlib** and **Seaborn** to create clear visualizations that were included in the AIEA Lab research paper

project: Driver's Handbook Interpreter

- Developed Chinese interpreter that enhanced the AIEA Lab's driving-rules project, extending the functionality to process the DMV Driver's Handbook in Chinese
- Utilized **NLTK** and **Jieba** for tokenizing and part-of-speech tagging, then transformed driving rules into a structured "IF-THEN" format by extracting key terms using the TF-IDF method

PROJECTS

Spring Boot Based Online Food Ordering System

- Designed online food ordering system with CRUD RESTful APIs using **Java Spring** framework
- Developed frontend using **React** for cart management, orders and checkout
- Managed database using **PostgreSQL** and utilized **Spring Data JDBC** for database to access on AWS RDS
- Implemented Spring Security for Session-based authentication

CSRES-Standard-Review-Toolkit: A Chinese Standards Review Application

- Developed standards validation application in Python that made compliance report proofreading 30 times faster
- Built web crawler using **requests** and **regex** to fetch and auto-update standards from the official government site (csres.com) into **PostgreSQL** database.
- Designed and implemented **PySide6** GUI enabling one-click validation and export for streamlined user interaction

Spotifire: A Spotify-like Music Android Application

- Designed Spotify-style music app using Google component architecture and the **MVVM** pattern
- Created mock RESTful APIs json-server and used **Retrofit** to handle requests
- Implemented bottom bar and page navigation using **Jetpack Navigation** component
- Used **Room** database for local cache functionality and enabling the "favorite songs" feature