

Yingrao (Kate) Yi

Full Stack Developer · Data Analyst · AI Software Engineer

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PROFESSIONAL SUMMARY

Master of Information Technology student at the University of Auckland with a solid foundation in Mathematics (Top 2% graduate). Expertise lies at the intersection of **Full Stack Development**, **Data Analysis**, and **Algorithm Design**. Proven track record of applying AI and mathematical modeling to solve complex real-world problems. Passionate about building scalable web applications and leveraging data-driven strategies to optimize operational efficiency.

Visa Status: Student Visa (Completing Feb 2026, eligible for 3-year Post-Study Open Work Visa).

TECHNICAL SKILLS

- **Languages:** Python, JavaScript/TypeScript, Java, C++, MATLAB, R, SQL.
- **Frontend:** React.js, Next.js, Svelte, Tailwind CSS, Three.js, HTML5/CSS3.
- **Backend & DB:** Node.js, Express, Prisma ORM, MongoDB, MySQL, RESTful APIs, JWT Auth.
- **Data & AI:** PyTorch, Pandas, Scikit-learn, Power BI, LLM Prompt Engineering, Mathematical Modeling.
- **Tools:** Git/GitHub, Docker, Vercel, VS Code, SPSS, Linux.

FEATURED PROJECTS

Focus Planet: 3D Gamified Task Manager

Sep 2024

▷ Tech Stack: Next.js, Three.js, MongoDB, Prisma, Tailwind CSS, PWA

- ▷ **Full-Stack Architecture:** Architected a scalable productivity platform merging habit formation with immersive 3D visuals using Next.js and Prisma/MongoDB.
- ▷ **3D Visualization:** Developed a high-performance interactive 3D environment using Three.js, enabling users to decorate personal planets with earned assets.
- ▷ **PWA Engineering:** Engineered a Progressive Web App with offline functionality and push notifications for a native-like experience.

Fullstack CMS Platform

Oct 2024 – Nov 2024

▷ Tech Stack: Svelte, Node.js, MySQL, Java Swing, REST API

- ▷ **System Design:** Built a unique hybrid architecture coupling a web-based client (Svelte) with a desktop admin panel (Java Swing).
- ▷ **Backend Optimization:** Designed an optimized MySQL schema to support infinite-depth nested comments using recursive logic.
- ▷ **Security:** Engineered a secure RESTful API using Node.js/Express with JWT authentication and Role-Based Access Control.

Pokémon Battle Simulator

Sep 2024

▷ Tech Stack: JavaScript, Svelte, CSS3, State Management

- ▷ Implemented complex turn-based game logic and damage calculation algorithms using Svelte Stores.
- ▷ Created fluid, high-performance battle animations using pure CSS3 keyframes without external libraries.

PROFESSIONAL EXPERIENCE

Research Assistant

Guangzhou, China — Jun 2023 – Jun 2024

Guangdong University of Technology — Focus: Numerical Algorithms & Scientific Computing

- Designed and implemented high-precision numerical algorithms to solve complex fractional-order partial differential equations using Python and MATLAB.

- **Impact:** Successfully reduced algorithm execution time for complex fluid dynamics simulations, demonstrating capability in high-performance scientific computing and problem-solving.

Business Analyst Intern

Guangzhou, China — Feb 2023 – May 2023

China Import and Export Fair (Canton Fair)

- Transformed raw exhibition data into actionable business intelligence using SQL and Power BI. Developed automated reporting pipelines to monitor key KPIs.
- **Impact:** Built interactive dashboards that streamlined the reporting process, enabling stakeholders to make data-driven decisions on resource allocation.

Data Analyst Intern

Macao SAR — Aug 2022

China Life (Overseas) Co. Ltd.

- Pioneered the use of Large Language Models (LLMs) to automate the extraction of key risk factors from unstructured insurance contracts.
- **Impact:** Leveraged NLP techniques to process unstructured legal documents, significantly improving the efficiency of risk assessment workflows.

EDUCATION

Master of Science in Information Technology

Auckland, NZ

University of Auckland

Jul 2024 – Feb 2026 (Expected)

- **Relevant Courses:** Data Mining & Machine Learning, Advanced Web Technologies, Software Engineering, Big Data Management.
- **Achievement:** Class Representative.

Bachelor of Science in Mathematics

Guangzhou, China

Guangdong University of Technology

Sep 2019 – Jun 2023

- **GPA:** 3.69/5.0 (Grade A- / Top 2% of Cohort).
- **Awards:** First Class Scholarship (Top 2%), Alpha Outstanding Achievement Scholarship.
- **Core Courses:** Mathematical Modeling, Numerical Analysis, Probability & Statistics, C++ Programming, Data Structures.

HONORS & AWARDS

- **National First Prize (Top 0.65%):** China Undergraduate Mathematical Contest in Modeling (CUMCM). 2020
- **National First Prize (Top 1.4%):** "Teddy Cup" National Data Mining Challenge. 2021
- **Meritorious Winner (Top 7%):** Mathematical Contest In Modeling (MCM/ICM). 2021
- **Second Prize (Top 15%):** Asia-Pacific Student Mathematical Modeling Competition (APMCM). 2020