ZIYANG (ROCKY) CHEN

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EDUCATION

The Chinese University of Hong Kong **Sep 2025 - Nov 2026**

MSc in Information Engineering, **GPA:** 3.425/4.0

- **Coursework:** LLM Deployment, Distributed Server Architecture, Data Science, Blockchain, Web Security

The Hong Kong Polytechnic University **Sep 2021 - Jun 2025**

BSc (HONS) in Financial Technology & Artificial Intelligence, **GPA:** 3.34/4.3 (Top 11%)

- **Highlights:** Cambridge Univ. Math for ENG Summer Programme (Scholarship), PolyHack2022 Award
- **Coursework:** Software Engineering, AI & ML, Computer Vision, Data Structures, E-payment & Crypto

INTERNSHIP EXPERIENCE

Hitachi Rail **Hong Kong SAR**

Testing & Commissioning (T&C) Intern Sep 2025 - May 2026

- Built a Python/Selenium automation framework to validate 20,000+ I/O signals across a distributed Hong Kong MTR control system spanning HMI, backend services, edge gateways, and PLC components.
- Cut point-level verification cycles from 2–3 months to under 10 days by automating I/O-list-driven test execution, validation, and screenshot evidence collection for repeatable regression and acceptance testing.
- Engineered custom JavaScript Shadow DOM traversal and I/O-list-driven test generation to interact with encapsulated HMI components and execute large-scale validation consistently.
- Diagnosed 10+ cross-layer failures by tracing application logs, service states, and signal flows across Cloud Foundry, Docker edge gateways, and OT/PLC components, using kubectl, Docker, and Jenkins.
- **Tech Highlights:** Python · Selenium · Shadow DOM · Jenkins · Cloud Foundry · Docker · kubectl

Bilibili Inc. **Remote, China**

Software Development Project Intern Jun 2025 - Jul 2025

- Developed the backend for an internal analytics dashboard using NestJS, TypeORM, and MySQL, exposing unified APIs for multi-dimensional aggregation and interactive data exploration.
- Reduced complex query latency from several seconds to under 100 ms by implementing Redis caching for high-frequency multi-dimensional queries.
- Designed a self-referencing TypeORM entity in MySQL to model parent-subsidiary relationships, supporting aggregation across three hierarchy tiers and six optional filters.
- Secured 10+ RESTful APIs with JWT authentication, global DTO validation, and response-level field masking, while developing 5 Next.js/Material-UI analytics pages with reusable chart components.
- **Tech Highlights:** NestJS · TypeORM · MySQL · Redis · JWT · MUI X Charts

PROJECTS

E-Commerce Web Application *(Next.js, React + Spring Boot + SQL + Azure + Nginx)* **Mar 2026**

- Architected a three-tier e-commerce platform using Next.js, Spring Boot, SQLite, and Nginx, hosted on Microsoft Azure VM with custom DNS and SSL/TLS configuration.
- Engineered shopping-cart and payment workflows using React Context, LocalStorage, and Stripe webhooks, with server-side price recalculation to prevent client-side parameter manipulation.
- Implemented JPA Optimistic Locking for voucher concurrency and layered security controls including BCrypt password hashing, CSRF nonce verification, parameterized SQL queries, and session validation.

AI Investment and Financial Advisory System *(React + Node.js + Flask + AWS RDS)* **Apr 2025**

- Developed a machine-learning risk profiling pipeline using the US Federal Reserve dataset, achieving R^2=0.9275 for risk-score prediction and F1=0.7394 for risk classification after feature engineering and one-hot encoding.
- Engineered a portfolio allocation engine using Markowitz Mean-Variance Optimization and SciPy SLSQP to construct risk-adjusted portfolios based on predicted profiles.
- Built a Monte Carlo scenario engine supporting Historical, GARCH(1,1), and Parametric models with inflation-adjusted cash flows to assess portfolio outcomes under varying market conditions.
- Architected a full-stack platform using React, Node.js/Express, Flask ML services, and AWS RDS MySQL, exposing RESTful APIs for end-to-end financial data processing.

SKILLS

Programming: Java, Python, JavaScript, SQL

Frameworks: Spring Boot, NestJS, Next.js, React, Flask

Tools & Infrastructure: MySQL, TypeORM, Redis, Docker, Kubernetes, Nginx, AWS, Microsoft Azure, Git