Richard Lan

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Personal Website | GitHub | LinkedIn

Education

Expected Completion: 2031

University of Waterloo | Honours Computer Science (Co-op) 2026 – Present

Bayview Secondary School | High School 2022 – 2026

Awards: John Platter Scholarship; University of Waterloo Merit Scholarship

Experience & Leadership

FlyRank AI Oct. 2026 – Present

Machine Learning Intern *Remote*

- Participating in FlyRank AI's self-paced Machine Learning track, completing technical assignments and practical AI/ML coursework.
- Developing skills in machine learning workflows, reproducible Python analysis, and model evaluation while working toward a reviewed capstone project.

Drive Gears #20261 2024

Autonomous Programming Lead, FIRST Tech Challenge (FTC)

- Developed Java-based autonomous robot programs in Android Studio, implementing ordered movement routines and task sequences to operate without driver input.
- Structured autonomous control logic into sequential actions, refining movement order and timing parameters to coordinate robot behavior during autonomous operation.
- Tested and debugged Java autonomous routines on the physical robot, identifying sequencing and timing issues and iteratively adjusting code based on observed behavior.

Technical Projects

MarketLab | *Next.js, TypeScript, Python, FastAPI, Turso* Oct. 2026

- Built and deployed a full-stack stock research and paper-trading platform covering approximately 95 U.S. stocks, with authentication, simulated trading, and persistent portfolios.
- Developed a Python/FastAPI analytics service using pandas and NumPy to backtest six trading strategies with transaction costs, benchmark comparisons, and walk-forward testing.
- Implemented reproducible backtests using immutable price snapshots and Turso/SQLite; added cross-language tests to validate Python and TypeScript calculations.

Scrollganizer | *TypeScript, Preact, SQLite WASM, WXT* Sept. 2026

- Collaborated in a three-person team to develop a Chrome extension for searching saved TikTok posts by caption, creator, hashtag, collection, and related terms.
- Connected the Preact side-panel interface to background services using typed RPC messaging for search, synchronization controls, and JSON import/export.
- Contributed to SQLite FTS5 full-text search with configurable AND/OR filters and persistent browser-local storage.

Technical Skills

Languages: Python, Java, TypeScript, JavaScript, SQL, HTML, CSS

Frameworks & Libraries: React, Next.js, FastAPI, pandas, NumPy, Tailwind CSS, Preact, WXT

Databases & Backend: SQLite, Turso, Drizzle ORM, FTS5 Full-Text Search, REST APIs, Better Auth

Developer Tools & Testing: Git, GitHub, VS Code, Android Studio, Vercel, Vitest, Playwright, ESLint

Certifications

Anthropic – Claude Academy Oct. 2026

Development: Claude Code 101; Claude 101; Introduction to Claude Cowork

AI Fundamentals: AI capabilities and limitations; AI Fluency: Framework and foundations

Applied AI Fluency: AI Fluency for students; AI Fluency for educators; AI Fluency for small businesses

Activities

University of Waterloo Clubs: Computer Science Club, Data Science Club, Waterloo Quant Club, UW Poker Studies Club