Tristan Ko

647-335-7835 | tristanko1116@gmail.com | LinkedIn | GitHub | Portfolio

Education

University of Waterloo — Waterloo, ON

Bachelor of Applied Science (BASc), Management Engineering (3.7 GPA) — *Sept. 2024 – Apr. 2029*

- Relevant Coursework: Programming in Python, OOP, Data Structures & Algorithms, Probability & Statistics, Linear Algebra, Data Analysis, Statistical Modeling, Optimization

Experience

Supply Chain Intern — May 2025 – Aug 2025

Iovate Health Sciences International Inc. — *Oakville, ON*

- Developed an advanced **Excel-based** buying tool to calculate reorder timing and quantities across **800+ active SKUs**, aligning purchases with Days of Supply targets to reduce manual planning and decision time by **90%+**
- Built a Python script with **Pandas** to automate **ERP** uploads, eliminating manual entry and ensuring **100%** data integrity
- Designed a **Power BI** dashboard centralizing key supply metrics, cutting report searches and boosting visibility by **70%**
- Collaborated with QA team to assess **deviation data** by warehouse reliance, targeting key issues and reducing errors **35%**

Firmware Developer — Jan 2025 – May 2025

UW Orbital — *Waterloo, ON*

- Developed CubeSat firmware and GNC systems for the Canadian Satellite Design Challenge, integrating real-time control, telemetry, and hardware synchronization across **3+ subsystems** to enhance responsiveness and stability by **25%**
- Programmed and optimized embedded C/C++ modules for sensor fusion, actuator control, and fault detection, implementing interrupt-driven scheduling to reduce command latency and test cycle times by **40%**
- Designed a watchdog system to detect and recover from communication faults, improving reliability and uptime by **30%**

Web Developer — Dec 2024 -Mar 2025

Downsview Presbyterian Church — *Toronto, ON*

- Rebuilt the church website with a modern Next.js stack, improving load speeds by **40%** and reducing admin work by **60%**
- Added English–Korean bilingual support using **dynamic routing** and optimized UI components for better accessibility
- Integrated a lightweight **CMS workflow** enabling staff to update content and announcements **without developer** help

Projects

Toronto Housing Price Predictor | *Python (pandas, NumPy, scikit-learn, XGBoost), SQL, PostgreSQL*

- Processed **5.782M** rows from **6** StatsCan files and Valet **API** sources to create a clean, consistent Toronto housing **dataset**
- Built a Python **ETL** pipeline that cleaned, merged, and **transformed** all datasets into a single **unified** analysis-ready table
- Developed an **XGBoost regression model** to forecast Toronto housing prices across multiple future prediction horizons
- Trained the model on **50+ years** of economic and housing **data** and evaluated accuracy using **MAE** and **RMSE** metrics

Resonate | *Next.js, React, Tailwind CSS, Node.js, Recharts, PostgreSQL, Spotify API*

- Built a **Spotify-connected Next.js** web app with **Supabase** OAuth; syncs **300+** tracks and **75** artists for **analytics**
- Engineered a 3-mode Spotify recommender using audio features and **dynamic seeding** across **1000+** track **dataset**
- Implemented **real-time analytics** dashboard with **Supabase RLS** and **Recharts**, charting songs, genres, and artists

FactorFive | *TypeScript, Next.js, Tailwind CSS, Node.js, Finnhub API*

- Developed a **full-stack** stock analysis website integrating **Finnhub API** data to evaluate stocks across five financial factors
- Implemented industry-based **normalization** for valuation metrics (**P/E, EPS growth**) to improve score accuracy
- **Optimized API** performance with **caching**, **batching**, and **rate-limiting**, cutting redundant calls and load time by **60%**

Excel Financial Planar | *Excel, VBA Macros*

- **Built** an automated budget and expense tracker in **Excel/VBA**, cutting manual tracking and calculation effort by **70%**
- Designed scenario-based financial models to project income, expenses, and savings, improving user decision-making
- Integrated **data validation**, **pivot** reporting, and **dynamic charts** for interactive analysis and clear financial visualization

Skills

Languages: Python, Java, R, C/C++, SQL, JavaScript/TypeScript
Libraries: Pandas, NumPy, scikit-learn, Matplotlib, Plotly, OpenPyXL
Frameworks & Tools: FastAPI, React, Next.js, Git, Power BI, Excel (VBA), Supabase