Tony Pan

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Education

University of Waterloo — Waterloo, ON
Honours B.C.S. in Computer Science, Minor in Economics — *Expected May 2030*
President's Scholarship of Distinction, Badminton Club

Technical Skills

Languages: Python, TypeScript, SQL
Frameworks: MongoDB, React, Express.js, Node.js, PostgreSQL, FastAPI
Developer Tools: Git, Docker, LLM APIs, Vercel

Experience

Contractual — Toronto, ON
Founder — *Aug. 2023 – Nov. 2025*

- Founded a VC-backed AI platform that enables small contractors to discover and secure government contracts, leading product strategy and technical execution.
- Worked with representatives from major contracting firms (e.g., Atria Development) through iterative testing cycles to translate real-world procurement workflows into scalable product features.
- Built backend services in Python (FastAPI) and Node.js, integrating RAG-based NLP search and AI form automation using OpenAI API, backed by MongoDB and a continuously updated contracts database of 1000+ contracts for compliance verification.

Kingbox Technology Limited — Scarborough, ON
Head of Market Research — *Jul. 2024 – Jun. 2025*

- Developed Python-based predictive forecasting models using historical commodity pricing data to optimize reclaimed metal sales timing, increasing realized margins by 12%.
- Delivered data-driven market analyses on commodity price trends, demand volatility, and supplier cost structures, supporting expansion into recycled materials and plastic-wood composite products.
- Built interactive dashboards using SQL datasets to track market volatility and supplier trends, improving forecast accuracy by 18% and supporting weekly executive decision-making.

Data Analyst — *Feb. 2024 - Jul. 2024*

- Analyzed historical commodity pricing, supplier transaction data, and inventory records to identify pricing inefficiencies and volatility patterns across key reclaimed metals, covering 3+ major material categories.
- Generated insights that informed short-term sales timing and procurement decisions, contributing to 8–10% improvement in realized margins during pilot implementation periods.
- Performed analysis using Python (pandas, NumPy) and SQL to clean, join, and aggregate datasets, and built exploratory visualizations to communicate findings to senior leadership.

Projects

Dunamis | *MongoDB, React, Node.js, Express.js* — Feb. 2025

- Developed a full-stack web platform using React, Node.js, Express.js, and MongoDB that enables high school students to discover extracurricular opportunities through natural-language search and filtering.
- Partnered with the Halton and Peel District School Boards to deploy Dunamis to reach 60,000 high school students across these districts.

Voyager-O | *Three.js, WebGL, GLSL Shaders, React, Next.js, Computer Graphics* — Oct. 2024

- Built a web application for the NASA Space Apps 2024 hackathon using JavaScript and React to visualize exoplanet night skies by mapping NASA and Gaia datasets (with a combined 50,000 data points), interpreting physical data into mathematically accurate, interactive 3D renders using Three.js.
- Implemented custom constellation generation using raycasting and vector mathematics, integrating GPT-3.5-Turbo via API to produce AI-generated educational narratives.