Tony Pan

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EDUCATION

University of Waterloo — Waterloo, ON
Honours Bachelor of Computer Science, Minor in Economics
President's Scholarship of Distinction, Badminton Club

TECHNICAL SKILLS

Languages: Python, TypeScript, Javascript, SQL
Frameworks & Libraries: React, Three.js, Tailwind CSS, Express.js, Node.js, FastAPI, pandas, NumPy
Tools & Platforms: MongoDB, PostgreSQL, AWS, Git, Docker, Vercel

EXPERIENCE

Shopify — Toronto, ON
Software Engineering Intern — *Apr. 2026 – Aug. 2026*
- Incoming for Summer 2026.

Contractual — Toronto, ON
Founder — *Aug. 2023 – Nov. 2025*
- Founded a pilot-stage 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+ government tenders for compliance verification.

Kingbox Group — Vista, CA (Remote)
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

Argus | *React, Three.js, Tailwind CSS, FastAPI, PostgreSQL, AWS* — Mar. 2026
- Built Argus, a global event intelligence platform that ingested, normalized, and geocoded 20,000+ multi-source events into a geospatial PostgreSQL pipeline, powering an interactive 3D globe for exploring world events.
- Developed a Gemini-powered AI copilot that answered natural-language questions by retrieving related event data and live web context, then surfaced connected narratives through interactive globe navigation and linked-event visualization.

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 (raycasting + vector math).
- Implemented custom constellation generation using raycasting and vector mathematics, integrating GPT-3.5-Turbo via API to produce AI-generated educational narratives.