

Tony Pan

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EDUCATION

University of Waterloo

Honours Bachelor of Computer Science, Minor in Economics

President's Scholarship of Distinction

Waterloo, ON

Expected May 2029

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Ruby, Go, Java, SQL

Web & Backend: React, Next.js, Node.js, Ruby on Rails, FastAPI, GraphQL

Data & Streaming: PostgreSQL, pgvector, MySQL, Kafka, Apache Flink, CDC

Infrastructure & Testing: AWS, Docker, Kubernetes, Buildkite, GitHub Actions, Playwright, pytest

AI & Agents: MCP, RAG, agent orchestration, agent evaluation

EXPERIENCE

Shopify

Toronto, ON

Software Engineering Intern

May 2026 – Aug 2026

- Built 3 next-generation event topics in 3 months; the platform's first took 7 months. Owned schema design and staged rollout across Rails, Flink/Kafka, and Go.
- Eliminated event loss from transient failures with automatic retries and dead-letter replay. Verified recovery by injecting failures and tracking end-to-end delivery.
- Prevented invalid event configurations from reaching production by generating shared metadata and validating it against database and authorization rules. CI and nightly alerts caught drift before runtime.
- Removed 250+ bytes of unused metadata from every Kafka message, reducing bandwidth and storage across billions of daily deliveries while preserving compatibility across versions.

Contractual

Toronto, ON

Founder

Dec 2025 – May 2026

- Built a production bid intelligence platform where one operator and a fleet of agents handled the workload of a 20-person procurement team, saving roughly 60 hours each week.
- Built scheduled ingestion from CanadaBuys, SEAO, and Toronto, keeping 3,970 opportunities and 7,480 documents searchable across 152,562 indexed passages.
- Automated complete government bid packages by filling native PDF forms and assembling written responses, pricing, and evidence into review-ready PDF and ZIP submissions.

PROJECTS

Graphcraft | *TypeScript, Node.js, MCP*

Jul 2026

Built in 48 hours at Shopify Summit Hack Days

- Published @tpypan/graphcraft, a CLI and MCP runtime that turns coding tasks and repository context into ordered plans, then coordinates agents through approval and failure recovery.
- Shopify engineering teams use Graphcraft for defined, long-running workflows that require accurate execution and automatic recovery from failures.
- Made runs resumable by isolating changes in Git worktrees and logging completed steps, so interrupted jobs continue without repeating approved work.

Argus | *React, TypeScript, Three.js, FastAPI, PostgreSQL, pgvector*

Mar 2026

Built in 48 hours at Hack Canada

- Won both the Google Gemini Track and Most Technically Complex Hack.
- Turned 20,000+ events into a geocoded dataset and interactive globe with related-event links, filters, and timeline playback.
- Pulled and embedded text, photos, video, and prediction-market data from Reddit, X, TikTok, and Kalshi to connect related global events across platforms.
- Built a research assistant that cited live web sources to explain events' impact on Canada; Hack Canada judges tested and validated its citation accuracy.