

# Tom Fan

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Software engineer based in Toronto with 4 years at Shopify building across the stack: distributed database design, infrastructure tooling, headless Rails backends, and React product features.

## TECHNICAL SKILLS

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**Languages:** Ruby, TypeScript, Go, Rust, Java, JavaScript, Python, C++, C

**Technologies:** Ruby on Rails, React, Node.js, GraphQL, REST, MySQL, YugabyteDB, PostgreSQL, Redis, Memcached, ProxySQL, Apache ZooKeeper, Docker, Kubernetes, ANTLR4, Jest

**Tools:** Google Cloud (GCP), Git, Linux (filesystem and disk tuning)

## EXPERIENCE

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### Software Engineer, Commerce Loop

May 2026 – Present

Shopify, Inc.

Toronto, ON

- Core contributor to Stock counts (GA Oct. 2026), Shopify's native inventory counting feature replacing the Stocky app; built backend services and MySQL models that write approved counts directly to the inventory ledger.
- Designed YugabyteDB primary keys and tablet distribution for the feature's mirrored schema, balancing query latency against hot-tablet risk; authored the backend and schema design docs.
- Implemented compare-and-swap and idempotency guarantees for concurrent multi-user counting, and built the React count details view and timeline in Shopify Admin.
- Restructured the E2E testing regime, eliminating redundant CI steps and reducing pipeline overhead.
- Led effort to shrink a high-volume database table from 1 TB to 450 MB.
- Authored technical reports on slow query sources and drove cross-team coordination to implement fixes.

### Platform Engineering Intern, Stateful Services

Jan. 2025 – Apr. 2026

Shopify, Inc.

Ottawa, ON

- Delivered \$2M+ in annual cost savings across Shopify's MySQL fleet through Ubuntu filesystem and disk utilization optimizations, including changes to disk resize logic and reserved block space.
- Designed and built internal service discovery and topology tooling in Go to mitigate bad query incidents by dynamically applying ProxySQL rules persisted in Apache ZooKeeper.
- Improved infrastructure resilience by automating MySQL writer failover and extending control plane RESTful APIs to support the process.
- Improved cache observability by creating Redis and Memcached key analysis tooling in an internal Rust service to enable early hotkey detection.
- Collaborated with backend teams to modernize legacy Rails ActiveSupport caching interfaces, reducing serialization overhead and I/O latency.

### Fullstack Engineering Intern, Analytics

May 2023 – Dec. 2024

Shopify, Inc.

Ottawa, ON

- Built GraphQL API models and features powering Shopify Admin Analytics, Admin Homepage, and public API integrations, serving millions of merchants and third-party apps.
- Implemented compiler features, grammar rules, and LSP components for ShopifyQL in Rust, TypeScript, and ANTLR4, enabling merchant-facing query capabilities for custom analytics insights.
- Refactored Shopify Admin's frontend routing architecture to support AI agent integrations.
- Reduced initial data fetch time by over 50% in a first-party analytics application through request consolidation, API efficiency improvements, and frontend React optimizations.

## EDUCATION

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### Carleton University

Ottawa, ON

Honours Bachelor of Computer Science

Sept. 2022 – Apr. 2026

- CGPA: 11.85/12 (3.95/4.0 GPA equivalent)
- Dean's List and Entrance Scholarship recipient — 2023, 2024, 2025, 2026