

# Matthew Farah

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## EDUCATION

**B.Eng Software Engineering, Minor in Mathematics** [McMaster University](#) Sep 2022 - Apr 2028  
GPA 3.7/4.0; math GPA ~3.9/4.0. Co-op program. Dean's Honour List (multiple terms); Award of Excellence (Fall 2022).  
**Non-Degree Studies, Pure Mathematics** [University of Toronto](#) 2026 - 2028 (expected)

## PROFESSIONAL SUMMARY

Software engineering student at McMaster University (Mathematics minor, graduating April 2028) with 12 months of Scotiabank co-op experience building Spring Boot microservices, Apigee APIs, and Azure web applications in Java, SQL, and React, and a current co-op at AMD writing Python and C++ test automation. Built ProofGuard, a Python proof checker that placed 5th by performance at ProoVer 2026, with its system description published in the competition proceedings.

## CORE COMPETENCIES

Java & Spring Boot

Python & C++

TypeScript & React

APIs & Microservices

Formal Methods

Testing & CI/CD

## WORK EXPERIENCE

**AMD (Advanced Micro Devices)** May 2026 - Present

**Software Engineer Co-op**

Markham, ON

- Wrote Python and C++ test automation for GPU/APU products (dGPU, APU) across Linux and Windows
- Designed and ran functional, regression, performance, and reliability test plans; reproduced and triaged defects through to closure with development teams

**Scotiabank** September 2024 - August 2025

**Software Engineer Co-op**

Toronto, ON; 12 months, rotated across 3 teams

- Global Wealth Management Engineering: architected Spring Boot microservices for bank business operations, including money transfers for large business customers; developed client-facing applications and backend APIs for investment management systems
- API Engineering (Scotia Digital Platforms): designed Apigee-based API Gateway solutions and built backend services/APIs with Java, including Java Spring API endpoints for Chassis, an internal tool; automated CI/CD pipelines with Jenkins, SonarQube, and Fortify
- Global HR Technology: built and maintained cloud-based (Azure) web applications in Java, SQL, and React; cloud database architecting and cloud functions that created jobs running against bank databases

## RESEARCH & TEACHING

**McMaster University** May 2026 - Present

**Undergraduate Mathematics Researcher (Supervisor: Dr. Alicia Marinache)**

Hamilton, ON

- Built [ProofGuard 1.0](#), an automatic checker for first-order logic proof certificates (TSTP); placed 5th by performance at the inaugural ProoVer 2026 competition (CASC-J13, IJCAR, FLoC 2026), classifying 70 of 91 proofs correctly, including 40 of the 47 deliberately broken ones; system description published in the proceedings
- Pure Python 3 with a recursive-descent TSTP/FOF parser and E prover-backed inference checking, shipped as a Docker package; tested on E-generated TPTP proofs and mutation-fuzzed variants, and now working toward a formal paper with supervisor

**McMaster University** September 2025 - April 2026

**Teaching Assistant**

Hamilton, ON; led tutorials and designed learning materials for 75+ students in MATLAB, systems analysis, and signal processing

## PROJECTS

### Inner Machinations

Desktop application for creating, visualizing, and testing DFAs, NFAs, and regular expressions. Implemented regex-to-NFA conversion, DFA minimization, state-transition logic, and graph visualization from scratch.

Rust, Tauri, SvelteKit, SQLite

### SpotiSize Live

Music visualization web app that turns Spotify listening data into interactive, bubble-scaled elements.

TypeScript, Next.js, Tailwind CSS

## SKILLS

**Languages:** Java, Python, C++, TypeScript, Rust, SQL    **Web & Frameworks:** Spring Boot, React, Next.js, SvelteKit, Tauri

**Cloud, DevOps & Other:** Azure, Docker, Jenkins, Git, CI/CD, Linux; Claude Code, Cursor, MCP servers; French (fluent)