

Ishpreet Nagi

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EDUCATION

McMaster University

Bachelor of Applied Science, Computer Science

• Summa Cum Laude | Dean's Honor List

Hamilton, ON

Sept 2021 — May 2026

WORK EXPERIENCE

Software Engineer and Research Coordinator

June 2024 — July 2025

Healthcare Systems Research & Analysis Inc.

Waterloo, ON

- Designed distributed backend data pipelines in **Python** with **PostgreSQL**, **Pandas**, and **NumPy** to ingest, preprocess, and validate large interconnected datasets, **automating 90% of downstream deployment**
- Implemented **RESTful service interfaces** and background job workers for long-running processing, with retry logic, schema validation, and clear technical documentation for downstream consumers
- Tuned relational queries and schema design (indexing, joins, batch reads) to keep multi-million-row workloads responsive
- Led 4 engineers across 8 stakeholders, turning ambiguous requirements into technical designs and shipping every milestone on time

Machine Learning Analyst and Research Assistant

May 2023 — May 2025

McMaster University - Department of Computing and Software

Hamilton, ON

- Built and maintained backend evaluation and model-serving infrastructure in **Python** under Dr. Douglas Down, achieving **40% accuracy gains** with **50% smaller models**
- Automated the evaluation loop with **Optuna**-based hyperparameter search and reproducible experiment tracking, **improving F1 by 90%** over the hand-tuned baseline
- Owned a research codebase across 2+ years with versioned schemas, reproducible pipelines, and **CI checks**, enabling other researchers to extend it unaided

PROJECTS

Kollec App (kollec.app)

Sept 2025 — Apr 2026

- Developed a production open-source card-collection platform with **Next.js** and **TypeScript**, deployed on Vercel and serving **100+** real users
- Designed and shipped scalable **REST APIs** and microservices using **Next.js API routes**, **Prisma ORM**, and **PostgreSQL**, owning the backend lifecycle from schema design through production deployment
- Built a stateful peer-to-peer trade-matching engine backed by complex **relational queries** and **asynchronous updates** across users, collections, and offers, applying **composite indexes**, pagination, and **N+1 elimination** to hold latency under **100ms at scale**
- Built an event-driven workflow for asynchronous card-identification jobs, hardened with retries, idempotency keys, and technical docs for internal API consumers
- Maintained **CI/CD** pipelines with **Git**, **GitHub Actions**, and **Docker** within a team of 7, driving code review, test-coverage, and **structured logging** standards

Technical Executive, DeltaHacks 10 (github.com/deltahacks/landing-10)

Aug 2023 — May 2024

- Maintained the DeltaHacks 10 platform over a full cycle, shipping to **1000+ applicants** under a hard deadline
- Built instrumentation and **structured activity logging** for engagement telemetry, treating observability as a first-class backend concern

SKILLS

- Languages:** Python, Java, TypeScript, JavaScript, SQL (PostgreSQL, MySQL), C/C++
- Backend & APIs:** REST, RPC, Microservices, Node.js, Prisma ORM, Event-Driven Architecture, System Design
- Data Stores:** PostgreSQL, MySQL, Supabase, Query Optimization, Schema Design, Indexing
- Infra & AI Tooling:** Distributed Systems, Concurrency, Docker, GitHub Actions (CI/CD), Git, GitHub Copilot, Cursor, Claude Code, LLM integration