

# Justin Nitoi

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## EDUCATION

### University of Waterloo

Bachelor of Computer Science

Sep 2024 — Dec 2028

Waterloo, Ontario

- **GPA:** 4.0/4.0 | Dean's Honours List | President's Scholarship of Distinction.
- **Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Linear Algebra, Calculus II, Probability & Statistics, Logic & Computation.
- **Awards:** Euclid Math Contest Honour Roll (Top 1% in Canada), AIME Qualifier.

## EXPERIENCE

### AI Engineering Consultant

Jun 2025 — Aug 2025

Story City

Remote

- Architected **3 AI microservices** using **Azure** and **Google Maps API**, engineering a graph algorithm that reduced storyboard creation time by **40%**.
- Optimized route duration prediction logic to within **±5 minutes** and migrated infrastructure to **AWS Lambda**, cutting projected cloud costs by **50%**.
- Presented technical feasibility reports to stakeholders, directly influencing the roadmap for **2 core product features**.

### Undergraduate Math Tutor

Sep 2025 — Present

University of Waterloo

Waterloo, Ontario

- Mentored students in Linear Algebra, improving regular attendees' grades by **15%** through rigorous proof analysis.
- Identified and corrected errors in student work, reinforcing the mathematical foundations required for upper-year CS.

## PROJECTS

### Stremio Movie Catalog Microservice | Python (Flask), Redis

Feb 2026 — Present

- Engineered a high-throughput **RESTful API** serving custom movie catalogs to over **1,000+ active users** on Stremio, handling peak traffic without downtime on Render.
- Implemented a **Redis caching layer** to store TMDB API responses, reducing upstream latency by **90%** and preventing external rate-limiting bottlenecks.
- Designed efficient JSON serialization pipelines to parse external movie metadata, optimizing response times to under **100ms** for end-users.
- [Try it here!](#)

### NameNet (Transformer Research) | Python, PyTorch

Jun 2025 — Aug 2025

- Engineered a gender classification model using **PyTorch**, benchmarking LSTM vs. Transformer architectures on **40k+** samples.
- Implemented data sanitization with **Pandas** to correct label inconsistencies, boosting validation accuracy from 88% to **99.2%**.

### WebMessenger | Python (Flask), JavaScript, SQL

Apr 2025 — May 2025

- Developed a secure full-stack messaging platform using **Flask** and a **Normalized (3NF) SQLite** database.
- Designed a custom ORM to abstract SQL queries and built a responsive frontend with asynchronous message updates.

### Neural Network from Scratch | Python, NumPy

Jan 2025 — Feb 2025

- Built a neural network for MNIST digit recognition **without ML libraries** to demonstrate mastery of backpropagation.
- Implemented Stochastic Gradient Descent (SGD) and ReLU activation manually, achieving **97%+ training accuracy**.

## SKILLS

- **Programming Languages:** Python, C++, SQL, JavaScript/TypeScript, HTML/CSS, Java, Scheme/Racket
- **Technologies:** PyTorch, Pandas, FastAPI, Flask, NodeJS, React, Git, Linux, AWS Lambda, Azure Functions
- **Certifications:** Microsoft Certified: Azure Fundamentals, Azure AI Fundamentals