

Pranav Vishal

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EDUCATION

University of Waterloo

Waterloo, ON, Canada

Bachelor of Computer Science

2026

- Courses: Algorithm Design and Data Abstraction, Object-Oriented Software Development, Probability, Statistics

PROFESSIONAL EXPERIENCE

Software Engineering Intern

Sep 2025 – Nov 2025

Xtillion

San Juan, Puerto Rico, USA

- Built a drawback matching engine in **Python** on **Databricks** using **greedy and min-cost flow algorithms** to optimize duty refund recovery, processing **200M+** import/export records per run with high-throughput distributed execution and deterministic matching accuracy, reducing manual reconciliation time by **60%**
- Developed **Apache Spark**-based ETL validation pipelines to verify import/export data integrity at scale, reducing pre-ingestion validation time from **4 hours to under 1 hour** through distributed processing optimizations
- Engineered a **RAG** system with **LangChain**, **FAISS**, and OpenAI APIs to automate Puerto Rico permit consultations, reducing response time from hours to seconds with **85%+** accuracy

Software Engineering Intern

May 2025 – Aug 2025

Etherfi

Toronto, ON, Canada

- Implemented EtherFi's referral leaderboard using **Next.js**, **NestJS**, and **PostgreSQL**, offloading aggregation and ranking logic to indexed **multi-stage CTEs and window functions** to compute cashback stats for **65,000+** users in a single query, **achieving sub-14ms** backend response times
- Built a **production-grade** cashback campaign system that evaluates eligibility rules, calculates rewards in real time, and enforces spending limits across user transactions, increasing sign-up volume by **88%**
- Ensured financial correctness using atomic database transactions and synchronized backend state with on-chain settlements via **NestJS** and **TypeORM**

Machine Learning Engineer

Jan 2025 – Apr 2025

WAT.ai

Waterloo, ON, Canada

- Engineered a cloud-native pipeline that converts a single prompt into a stitched cinematic trailer in under 5 minutes using **FastAPI**, **Veo-2**, **MoviePy**, **Eleven-Labs** and **GCS**
- Added **LoRA-tuned Stable Diffusion** reference frames to each Veo-2 request, locking in character design and art direction and boosting cross-scene visual consistency from 40% to 70% on first pass

Software Engineering Intern

Sep 2024 – Dec 2024

Lincoln Electric

Cleveland, OH, USA

- Built an image detection program with **PyTorch YOLOv5** to identify machine error sources from real-time camera feeds during stalls, reducing recovery time by 11%
- Designed and implemented **RESTful APIs** using **C#** and **ASP.NET Core**, optimizing data retrieval using **MongoDB** queries, improving the response time for over 380 PythonX clients

Software Developer Technical Lead

Jan 2024 – Aug 2024

UW Blueprint

Waterloo, ON, Canada

- Developed a delegation algorithm in **TypeScript** to assign reviewers to incoming applications, improving the total recruitment process by over 30%

Full-Stack Software Developer Coop

Jan 2023 – Apr 2023

ATS Automation

Cambridge, ON, Canada

- Improved automation platform response time by 18% by adding timeouts to prevent log console blocking (**C++**)

TECHNICAL PROJECTS

Venmito Data Engineering 📄 | *Flask API/Pandas/React/TailwindCSS/Chart.js*

- Built a data pipeline using **Flask** and **Pandas** to clean and transform multi-format company datasets into processed CSVs, then stored them in SQLite with **SQLAlchemy**
- Created a robust **Flask API** and an interactive **ReactJS** frontend with dynamic visualizations powered by **Chart.js**, enabling users to seamlessly explore data with advanced filtering options

TECHNICAL SKILLS

Languages: C/C++/C#, Java, Python, Dart, JavaScript, TypeScript, HTML, CSS, Bash, SQL

Frameworks/Technologies: ReactJS, NodeJS, Flask, FastAPI, Tailwind, Rest APIs, PyTorch, Git, GraphQL, NextJS