

RAPHAËL ONANA

Data Science, Machine Learning & AI Engineering

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EXPERIENCE



Junior Data Scientist Student • Elections Canada

Nov 2025 – Present

Gatineau Canada

- Migrated and debugged 3,500+ lines of legacy SAS and python code for critical audit workflows, identifying and resolving 6+ high-impact logical bugs and data parity issues (e.g., non-equi joins, null-handling) to ensure accurate reporting.
- Modernized team development standards by implementing virtual environments and introducing Pytest testing framework, reducing onboarding setup time and accelerating the code review process through standardized documentation and type-hinting.



Software Engineer Intern • Caterpillar Inc.

Jan 2025 – Apr 2025

Montreal, Canada

- Led enterprise-scale CI/CD pipeline migration from Azure DevOps to GitHub Actions, developing automation scripts that reduced workflow runtime by 62% across distributed build environments
- Worked extensively with Git to integrate GitHub Actions Importer, a tool achieving 80% accuracy in automated pipeline translation, documented migration process serving as company-wide standard for 5+ development teams
- Debugged complex Make/CMake build systems and wrote Bash automation scripts to identify runtime bottlenecks. Included translation of Docker-based build and test configurations simulating several virtual machines' environments



Software Engineer Intern • Ford Motor Company

May 2024 – Dec 2024

Ottawa, Canada

- Automated token management system using Python and Jenkins for distributed test infrastructure, reducing manual task time by 90% and processing 70+ device data
- Built several FNV (Fully Networked Vehicle) test stations from scratch using Infotainment systems, Arduinos, ECUs, telematics hardware, and 15+ electronic components across 4 vehicle platforms
- Developed Python data processing pipeline using Pandas and NumPy to automate weekly failure analysis reports, eliminating 100% of manual Excel processing and generating real-time insights
- Mentored 3+ interns and contractors on key workflows and proprietary tools, creating documentation that reduced onboarding time, and provided hands-on training, enabling independent test management within 10 days

Machine Learning Projects

EchoCV | RAG, Langchain, GroqLLM, chromadb

July 2025

- Built an AI-powered interactive resume chatbot using RAG (Retrieval-Augmented Generation) architecture with ChromaDB vector database and Groq LLM, enabling visitors to ask natural language questions about technical skills, projects, and experience through a Streamlit web interface

Domain Classifier – Convolutional Neural Net | Pytorch, Pandas, numpy, python, maths

Dec 2025

- Implemented an adversarial image classifier using PyTorch ResNet18 model to prevent misuse on outside data, achieving about 52% accuracy (class avg: 48%), on in-domain data with controlled out-domain degradation, with 27% accuracy

Syncwave App – Cross-Platform Music Sync | FastAPI, Nextjs, OAuth2, Claude code LLM

Sept. 2025 – Present

- Full-stack web app that automates YouTube-to-Spotify playlist migration using OAuth2, Google, and Spotify APIs, boasting over 75% match accuracy.

FoodBank Ai – Computer Vision Project | Python, Flask, Pytorch, Numpy, Postgresql, React

Sept 2024

- Worked on the front and backend of foodbank ai, a hackathon project, which is a gamified web app to encourage food donations. Refined API data for a gamified food-donation app; trained a PyTorch fruit classifier with 75% accuracy

EDUCATION

CARLETON UNIVERSITY

Sep 22 – May 27 | Exp.

B.S Computer Science Honors, AI/ML Stream & Minor in Maths, Statistics

GPA: 11.75/12

Courses: Data Structures and Algorithms, Machine Learning, Operating Systems and Database Systems

Technical Skills

Programming Languages: Python, Typescript, Javascript, Java, C, C++, HTML5/CSS, SAS, Haskell

Developer Tools: Git, GitHub, Azure DevOps, Jenkins, GitHub Actions, Docker, Putty, Grafana, Linux, bash, Jira, VMs

Frameworks: Pandas, Numpy, Pytorch, sklearn, RAG, LangChain, NextJs, MongoDB, SQL, AWS Cloud Practitioner

Languages: English, French, Spanish (AI-learning) **Hobbies:** Piano, Soccer, Tennis, Cycling