Alex Levesque

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EDUCATION

Queen's University, Kingston, Canada **Sep 2024 – Apr 2028**

- BASc in Applied Mathematics and Computer Engineering | Relevant Coursework GPA: 3.82/4.00
- Fall 2025 Coursework: Differential Equations, Vector Calculus, Data Structures, Algebraic Structures and Discrete Math, Digital Systems, Engineering Design and Practice

PROFESSIONAL EXPERIENCE

AI Researcher, Algoverse AI Research **Jun – Nov 2025**

- Conducted AI research in a 12-week program with mentorship from PhDs at Meta, OpenAI, and Princeton
- Enhanced large language models (Qwen3-235B-A22B, GPT-OSS) by implementing a self-contrastive Mixture-of-Experts (MoE) architecture using **PyTorch and Jupyter Notebooks**
- Co-authored a research paper under review, presenting novel contrastive decoding techniques that improve model efficiency by 2% across benchmarks in **MoE** architectures, showing measurable gains in large-scale AI performance

GenAI Intern, Government of Canada – Immigration Board **May – Aug 2025**

- Designed and implemented an Azure workflow to transcribe, categorize, and organize refugee documents with 93% accuracy, cutting manual processing time and improving operational efficiency
- Engineered an Azure chatbot using **Cosmos DB (NoSQL), NLP, and embedding pipelines** to automate legal document classification, cutting processing time from hours to under 10 minutes
- Delivered a conference presentation translating AI workflows and showcasing their business applications, enabling stakeholders to identify automation opportunities and improve operational efficiency

PERSONAL PROJECTS AND EXTRACURRICULARS

Adaptive Reinforcement Learning Ensemble Strategy, Queen's AI Club

- Implemented and trained an ensemble of PPO, A2C, and TD3 reinforcement learning agents, enabling adaptive allocation across multiple market regimes via monthly rotation based on trailing performance
- Engineered a diversification framework that reduced portfolio volatility and improved risk-adjusted returns, validated by Sharpe ratio and drawdown analysis versus SPY Buy-and-Hold

Autonomous Multi-Agent Robotic Firefighting

- Developed and optimized Lloyd's algorithm in MATLAB for adaptive k-means clustering of dynamic fire hotspot data, reducing cluster convergence time by 30% and improving autonomous robot deployment efficiency
- Leveraged GIS wildfire spatial data and analysis tools to delineate and model fire perimeters, enabling accurate real-time input for robotic firefighting cluster optimization and enhancing fire containment strategies

AWARDS

GRAMMY Music Award, The Recording Academy **Feb 2024**

- Received a **GRAMMY Award** for contributions to Killer Mike's *MICHAEL*, 2024 Rap Album of the Year; produced for the Migos, Gunna, Peso Pluma, Roddy Ricch, Polo G, A Boogie, Lil Tjay, Skepta, Cam'ron, etc.

Canada's Top Students, Scotiabank **Nov 2025**

- Selected as 1 of 30 attendees for Scotiabank's **Canada's Top Students** conference and case competition

ADDITIONAL INFORMATION

Languages: Python, C++, C, SQL, fluent and native in English and French
Libraries & Frameworks: Pandas, Jupyter Notebook, PyTorch, Scikit-learn, Cosmos DB
Tools & Platforms: Microsoft Azure, Git, Copilot Studio, n8n, Excel
Interests: Music Production, Karate Black Belt, Alternative Data, Classical Piano, Philosophy, Bayern Munich FC