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EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Computer Science (Minor in Statistics; A.I. Specialization)   *September 2020 - April 2025*
- ○ **Relevant Coursework**: AI, ML, OS, Algorithms, Data Structures, OOP, Databases, Compilers, Stochastic Processes
- ○ **Organisations**: **Entrepreneurship Club** (Sr. Full Stack Dev.), **Wat Street** (Quant. Dev.), **WARG** (Autonomy Dev.)
- ○ **Awards**: President's Scholarship of Distinction, Mathematics International Experience Scholarship, Certificate of Distinction in Euclid Mathematics Contest

EXPERIENCE

Royal Bank of Canada   Toronto, ON
Cloud Engineer (Cloud, Data and Analytics Platforms, Technology & Operations)   *September 2023 - December 2023*
- ○ Increased deployment efficiency by **45%** through automating infrastructure setup with **Golang**, **Jenkins**, and **Terraform**, simplifying complex Databricks workspace deployments in a secure environment.
- ○ Enhanced backend functionality of key products by developing Java-based microservices using **Spring Boot JPA**, integrated with **Azure Data Factory** and **Microsoft Purview** to optimize data governance and ETL processes.

Sportiqo Labs Inc.   Oakville, ON
Software Developer (Part-time)   *February 2023 - Present*
- ○ Creating a sports article generation LLM, using **Python**, **LangChain**, and **Apify** to streamline content generation.
- ○ Created dynamic and interactive cricket Sporti-score component visualizations using **JavaScript (Chart.js)**, enhancing data understanding and presentation.

BlackBerry Ltd.   Waterloo, ON
Application Software Developer, Product Engineering (CylanceGATEWAY & BBM Enterprise)   *January 2023 - April 2023*
- ○ Designed and developed a multithreaded data engine in **C++** to improve packet-capture efficiency, integrated with a **Python** ML model to predict C2 beacons from the captured network traffic without peeking at packet data.
- ○ Implemented 5+ features for core libraries utilized extensively across multiple BlackBerry projects. Resolved OIDC and 2FA authentication flow issues in Gateway's internal testing tool, resulting in a **50%** efficiency increase.

BlackBerry Ltd.   Waterloo, ON
Software Development Engineer, IVY Intelligent Vehicle Development Platform   *May 2022 - August 2022*
- ○ Created automated tools with **Python** and **AWS** for release package management improving efficiency by **30%**.
- ○ Designed and implemented a JSON configuration file semantic validator in **C++** and integrated it into IVY IVDP.
- ○ Led team of 4 to improve client interaction with the Camera service by implementing the Permission service callback feature. Additionally, developed **Bash** scripts to automate build, upload, and test processes, boosting efficiency.

PROJECTS

Latexify Py (Google OSS) ⎮*Python, NumPy, LaTeX* ⎮ *November 2023*   🔗
- ○ Added support for converting 7 NumPy NDArray single function expressions to LaTeX and fixed GitHub CI issues.

Behavioural Cloning for Autonomous Driving ⎮*Python, PyTorch, OpenCV* ⎮ *March 2024*   🔗
- ○ Trained CNN model to predict steering angles from images of a car's perspective, achieving MSE of 0.04 degrees.

Genetic Algorithm Neural Network Car Simulation ⎮*C++, SFML* ⎮ *January 2024*   🔗
- ○ Implemented neural networks from scratch for agent learning and navigation in SFML-based environment.
- ○ Integrated genetic algorithms to enhance neural network evolution, achieving progressive improvements in autonomous car decision-making and adaptability.

Reinforcement Learning projects ⎮*Python, PyTorch, Stable-Baselines3, OpenAI Gym* ⎮ *August 2023*   🔗
- ○ Developed RL agents using techniques such as deep Q-learning and PPO for classic problems and games, including the Inverted Pendulum/Cart-Pole problem, Lunar Lander, and Atari *Pong*. Currently exploring *StarCraft II* agents.

TECHNICAL SKILLS

- • **Languages**: C/C++, Python, Java, TypeScript, JavaScript, Golang, R, SQL, HTML/CSS, Bash, MIPS
- • **Libraries & Frameworks**: Qt, React, React Native, Spring Boot JPA, TensorFlow, PyTorch, Scikit-learn, OpenCV
- • **Other**: Linux, AWS, Azure, Terraform, Docker, Jenkins, Git, CMake, PostgreSQL, NoSQL, Node.js, Jupyter, LaTeX