

EDUCATION

University of Waterloo

Waterloo, ON

Bachelor of Honors Computer Science (Minor in Statistics; GPA: 3.85/4.0)

September 2020 - April 2025

- **Relevant Courses:** AI, ML, OS, Algorithms, Data Structures, OOP, Databases, Compilers, Stochastic Processes
- **Organisations:** **Formula Electric** (Firmware), **WARG** (Autonomy), **Wat Street** (Quant), **EntSoc** (Sr. Full Stack Dev.)
- **Awards:** President's Scholarship of Distinction, Mathematics International Experience Scholarship

EXPERIENCE

Amazon Web Services

Berlin, DE

Software Development Engineer Intern, AWS Redshift (Data Plane, Query Processing)

September 2024 - Present

- Extended **Redshift SQL** parser & rewriter for SUPER-type unnesting. Wrote 50+ **C++** & **Python** tests ensuring robustness, addressing migration needs for 12+ customers, including top-10 customer with a multimillion dollar deal.
- Designed behavior for new **FLATTEN** keyword. Exceeded stretch goals by actively participating in daily SWE tasks, including triaging blockers, resolving customer issues, and handling responsibilities typically reserved for FTEs.

Royal Bank of Canada

Toronto, ON

Cloud & AI Engineer Intern (Cloud, Data and Analytics Platforms, Technology & Operations)

May 2024 - August 2024

- Engineered a highly scalable PII-detection system for semi-structured and unstructured data using **Apache Tika**, **Microsoft Presidio**, **Apache Spark**, **Kubernetes**, **Docker**, **Java**, and **Python**, enabling efficient detection of PII data.
- Implemented hierarchical multi-agent AI systems with **LangChain**, **Python**, and **LLMs** for chatting with SEC filings and Azure data plane, and filling forms. Designed **RAG**-system for extracting insights from SEC EDGAR database.
- Streamlined the deployment of managed **Azure Data Factory** instances by creating custom, dynamically configurable **Terraform** modules. Developed **Azure Data Factory** pipelines to collect metrics data for the **Cloud Analytics** project.

Royal Bank of Canada

Toronto, ON

Cloud Engineer Intern (Cloud, Data and Analytics Platforms, Technology & Operations)

September 2023 - December 2023

- Spearheaded key initiative to automate Databricks deployments, achieving **10x** reduction in setup time from weeks to hours with a custom **Golang**, **Terraform**, and **Jenkins** solution, addressing major security and compliance challenges.
- Developed **Spring Boot** APIs for dataset management, reducing manual updates by **80%** for **Microsoft Purview**-based data governance tool and streamlining whitelisting for an **Azure Data Factory**-based data movement tool.

BlackBerry Limited

Waterloo, ON

Application Software Developer Intern, 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 captured network traffic, increasing prediction accuracy by **~5%**.
- Implemented 5+ features for core libraries utilized extensively across multiple projects. Resolved OIDC and 2FA issues in Gateway's internal testing tool, improving DX and decreasing login times by **~30%**.

PROJECTS

Latexify Py (Google Open-Source) | Python, NumPy, L^AT_EX | November 2023



- Added support for converting 7 **NumPy** NDArray single function expressions to **L^AT_EX** 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 an MSE of 0.04 degrees.

Reinforcement Learning Mini-projects | Python, PyTorch, Stable-Baselines3, OpenAI Gym | August 2023



- Developed RL agents for classic problems and games, including the Inverted Pendulum/Cart-Pole problem, Lunar Lander, and Atari Pong. Currently exploring agents for *StarCraft II* and *DOOM 1993*.

TECHNICAL SKILLS

- **Languages:** C/C++, Python, Java, TypeScript, JavaScript, Golang, R, SQL, Bash, HTML/CSS
- **Libraries & Frameworks:** Qt, React/Native, Spring Boot, Next.js, Flask, TensorFlow, PyTorch, Scikit-learn, OpenCV
- **Other:** Linux, AWS, Azure, Terraform, Docker, Kubernetes, Jenkins, Git, CMake, PostgreSQL, NoSQL, Node.js, Tailwind CSS, TCP/IP, REST APIs, Jupyter, L^AT_EX, Agile