Samuel Harrison

Ottawa, Ontario

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EDUCATION

University of Ottawa   **Expected Graduation April 2025**

BSc in Computing Technology and BASc in Chemical Engineering – 4th Year
- Computing Technology GPA : 10.0/10.0, Chemical Engineering GPA : 9.0/10.0
- Dean's Honour List and Dean's Merit Scholarship 2020 – 2023

WORK EXPERIENCE

GBatteries (Ottawa, ON)   **September 2023 – January 2024**

Algorithm Developer Intern for R&D Division
- Developed end-to-end data and model agnostic pipeline for PyTorch models
    - Used Optuna for hyperparameter tuning and persistence during EC2 instance interruption; Opted for AWS spot instances resulting in a 60% saving on compute
    - Deployed models with FastAPI and maintained time-series data buffers using Redis
    - Created CI/CD pipeline using GitlabCI to automate PyTest testing, building distribution and Docker image, and deployment to registry and PyPI server
- Created Electrochemical Impedance Spectroscopy dashboard, and accompanying REST API to standardize data acquisition and share battery cycling results across teams
    - Used React, Typescript, and Bootstrap to build dashboard where users could access, plot, compare, average, share, and fit data across many EIS sweeps to support research efforts
    - Integrated API calls into existing EIS platforms for transmission of sweep conditions, relevant metadata, and impedance results; Data housed in MongoDB
- Trained, tuned, and tested various machine learning and deep learning models from the literature to tackle state estimation of Li-Ion batteries during drive cycle tests

Public Services and Procurement Canada (Gatineau, QC)   **May 2022 – August 2022**

Junior Data Scientist for National Project Oversight Branch
- Developed an automated review system for the National Project Management System to provide early warnings for projects at risk of exceeding time, budget, or scope constraints.
- Reduced quarterly review exercise timeline from over 60 hours to approximately 5 minutes.
- Created a comprehensive dashboard to visualize project data, highlighting trends across projects and regions.
- Worked extensively with large, complex datasets in the project management and financial industry.

PROJECTS

Semiconductor Data Pipeline and Plotting Application - SkyWorks Solution, Inc.

Created application to automate lab data processing and streamline the analysis of semiconductor device performance | Flask, React, JS, Plotly, Bootstrap, Docker

Uranium Milling Demonstration Plant – Hatch Ltd.

Collaborated with engineering firm for capstone project, optimized solvent extraction process using deep reinforcing learning and performed statistical analysis on project economic viability | Tensorflow

SKILLS

- Languages : Python, Java, JS/TS
- Web Development: React, Next, Svelte, SvelteKit, Tailwind, Bootstrap
- Databases : MongoDB, Redis, PostgreSQL
- DevOps : Docker, Gitlab CI, Linux, Bash, Git
- Cloud : EC2, S3, RDS
- Machine Learning : Pandas, Numpy, Scikit-Learn, PyTorch, Lightning, Optuna, XGBoost