

William Callaghan

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Software Engineer/Machine Learning Team Lead

Skilled Software Engineering and Machine Learning professional with 8+ years of proven experience. Expertise includes designing production Machine Learning systems along with Machine Learning and Data Operations. Proven track record of success building infrastructure for Machine Learning and driving secure product development. Well-versed in core technologies including Python, Spark, Google Cloud Platform, Docker, and Kubernetes. Versatile and adaptable, able to contribute as an Individual or by leading a team. A lifelong learner currently pursuing a Master of Science degree in Machine Learning and a Professional Certification in Responsible Artificial Intelligence.

Core Competencies

- Machine Learning Systems/Operations (MLOps)
- Data Operations
- Software Architecture Design
- Software Engineering
- Orchestration, & Scheduling
- Machine Learning Engineering
- Team Leadership
- Mentorship
- Cross-Functional Collaboration

Professional Experience

Georgian, Montreal, QC

2023 – Present

Software Engineer/Interim Team Lead

- Lead team of 3 Engineers through the development and deployment of Georgian Grow's Machine Learning capabilities
- Contribute technical development of the product through code reviews, architecture discussions, and implementation tasks
- Facilitate team meetings to review progress, address challenges, and brainstorm solutions to promote communication and teamwork
- Lend insights and knowledge to more junior team members through mentorship and technical guidance
- Collaborate with product, engineering, and other stakeholders to prioritize features, define project milestones, refine product roadmap based on customer feedback and ensure alignment with business requirements for successful delivery

Georgian, Montreal, QC

2021 – 2023

Software Engineer

- Brought in as initial engineer to productionize Georgian Grow, a sales lead prioritization product
- Led initial product architecture and roadmap together with product management to scale product for multiple customers
- Integral in development of the AutoML pipeline engine to power the Georgian Grow product with notable effects being:
 - Streamlined onboarding to reduce setup required to compose Machine Learning pipelines
 - Reduction of custom code and manual engineering through implementation of automatic feature engineering tools
 - Ensuring model quality validation through implementation of Machine Learning testing and monitoring
- Organized Transferred Learnings Committee, a community of machine learning practitioners and researchers
- Built, deployed, and performed troubleshooting on ML models for customers ensuring time-to-value and minimal downtime

DevSential, Inc., Montreal, QC

2021 – 2021

Co-Founder/Principal Software Developer

- Responsible for the overall planning, design, and implementation of the company's core infrastructure product called Hyperplane
- Integrated service mesh networking into the Kubernetes environment improving application performance and security
- Implemented GPU support into workloads allowing clients to leverage GPUs in a distributed manner
- Improved user experience through decreased wait time by optimizing load times of GPU-accelerated libraries
- Formed relationships with clients to improve sales pipeline, customer satisfaction, and improved product planning

Entrepreneur First, Toronto, ON

2020 – 2021

Founder-in-Residence

- Member of the first Canadian cohort for the world's leading talent investor, which helps ambitious people reach their full potential.

Borealis AI, Montreal, QC

2018 – 2020

Data Engineer

- Developed tools and frameworks to support increased governance and observability across the machine learning lifecycle
- Created Spark applications to support efficient data transformations on large datasets throughout the ML lifecycle
- Optimized feature engineering and hyperparameter tuning pipelines improving runtime by orders of magnitude
- Built internal tools designed to simplify querying of large, distributed datasets composed of multiple tables
- Contributed to writing documentation along with analytical tasks for model validation and governance
- Partnered with business, research, and engineering stakeholders to bring model from concept to production

eSentire, Inc., Cambridge, ON

2015 – 2017

Software Engineer

- Began as Contract Engineer in 2015, Software Engineering Intern in 2016, and part-time Software Engineer in 2017
- Provided development support to ongoing analytics projects and served as Lead for the Network Scan Analytics project
- Built an engine to perform complex queries on large data sets with mission-critical response times
- Created RESTful HTTP APIs to interface with various components of the analytics pipeline
- Partnered with Analytics Lead and stakeholders to properly define ongoing projects and infrastructure
- Utilized multiple technologies including Python, Scala, Apache Spark, Cassandra, Kafka, Alluxio, and HDFS
- Served as Core Developer on Targeted Retrospective Analysis Platform bringing prototype to product

Academic Experience

Université de Montréal, Montreal, QC

2023 – 2023

Teaching Assistant – IFT6758: Data Science

University of Waterloo, Waterloo, ON

2015 – 2018

Graduate Research Assistant/Teaching Assistant

Technical Skills

Languages/Scripting:	Python, TypeScript, Bash
Data Tools:	Apache Spark, Python Pandas
API Development:	Flask, FastAPI
Cloud:	Google Cloud
CI/CD:	GitHub Actions, Terraform
Containerization:	Docker, Kubernetes
Machine Learning:	PyTorch, SKLearn, MLFlow
Databases:	BigQuery, PostgreSQL, Cassandra, Teradata
Scheduling:	Dagster

Education

Université de Montréal & Mila, Montreal, QC

In Progress

Master of Science in Machine Learning

University of Waterloo, Waterloo, ON

2018

Master of Mathematics in Computer Science

University of Western Ontario, London, ON

2015

Honors Bachelor of Science in Computer Science, Microbiology & Immunology

Certifications

MILA Trustworthy & Responsible AI Learning

2024

Raw Signal Group Management Training

2022