

SPENCER HAYES-LAVERDIÈRE

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Passionate data scientist and machine learning engineer with experience solving real-world problems in computer-vision, natural language processing, and finance. Currently leading the data initiative at a retail tech startup focused on scan-and-go and autonomous checkouts.

EXPERIENCE

2021 – CURRENT

DATA SCIENTIST & MANAGER, [LEAV](#)

- Led and managed the data department at Leav, overseeing all data-related projects and managing and mentoring an intern.
- Led the development and deployment of a real-time recommendation algorithm using the mlxtend library and Flask framework in Python, deployed as a Docker container on Cloud Run and capable of serving hundreds of requests per second with minimal latency.
- Designed and integrated a robust end-to-end ELT data pipeline able to process tens of thousands of events and their metadata per second with redundancy that led to no lost data on two separate Cloud platform outages.

MAY 2021 – SEP 2021

DATA SCIENTIST – CONTRACT PART-TIME, [ANAGRAPH](#)

- Provided data analyses to clients with a specialization in geospatial data using libraries such as geopandas and tools like PostGIS.
- Developed custom location intelligence tools including one which helped an international shipping company track regulation changes for trips through different coastal jurisdictions.
- Improved in-house data science practices and tooling by incorporating a new method for testing database functions in DBT and experimenting with tools like Jupyter Hub to see how they fit with company workflows.

2020 – 2021

MACHINE LEARNING ENGINEER, [SQUAREFEET.AI](#)

- Led the development of pricing algorithms and models using techniques that included transfer learning and mixed data inputs (image, tabular, text).
- Created a search feature that could find the most similar property to an input based on hundreds of different features and drawing from a dataset with over 5 million properties.
- Integrated explainable AI tools such as SHAP to give insights on models and track metrics like class bias on model performance.
- Trained and deployed large cloud models using accelerated hardware through AWS' SageMaker.
- Pricing model led to the successful acquisition of the company by a [pair of leading appraisal firms](#).

2018 – 2020

INSTRUCTOR, UNIVERSITY OF OTTAWA

- Taught enrichment courses in Electrical & Computer Engineering
- Led in-school workshops teaching young kids engineering skills such as coding and 3D printing

SKILLS

- **Bilingual** (English/French)
- **Statistics/Machine Learning:** Clustering, Encoding/Decoding, Mask R-CNN, Universal Sentence Encoder, ResNet, XGBoost, Tensorflow + Keras, PyTorch, Open-CV, MLflow, NLTK, scipy
- **General tools:** Python, Java, C, FPGA, Flask, Kubernetes, AWS, GCP, Azure, Git, DVC, Linux
- **Data tools:** Pandas, geoPandas, DVC, PostgreSQL + PostGIS, NoSQL, NumPy, SQL, Apache Beam
- **Explainable AI:** SHAP, LIME

ARTICLES

[Terraform vs Pulumi: Which is right for you?](#) *Medium*. January 19, 2023

[Finding Seasonal Trends in Time-Series Data with Python](#). *Towards Data Science*. Jun 7, 2021

EDUCATION

2016 – 2020

BASC COMPUTER ENGINEERING (CO-OP), UNIVERSITY OF OTTAWA

Minor in Business Management & Entrepreneurship.

Capstone: Land-robot and aerial drone co-operative autonomous system.