

James Ross

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WORK EXPERIENCE

KPMG Lighthouse - Data Science Intern

May - Aug 2023

- Designed natural language processing techniques in Python for analyzing audit reports, introducing transformer-based QA models and entity recognition with accuracy improvements of over 80%.
- Optimized pre-existing usage of machine learning models, improving process speed by a factor of 20.
- Refined public speaking skills through assisting with product demos to external, non-technical clients.

The Vector Institute - Computer Vision Research Assistant

May 2022 - Dec 2022

- Designed a set of novel continual learning strategies for deployment in an augmented reality setting using PyTorch, leveraging RCNN and transformer-based architectures.
- Built a high-performance, extensible PyTorch prototyping environment, training and benchmarking eight pre-existing continual learning strategies and designing three novel strategies.
- Implemented heavy optimizations into the framework, including detailed profiling strategies and multi-GPU parallelization to reduce overall training time by 75%.

Royal Bank of Canada - Data Science Intern

May - Aug 2020 & Jan - Aug 2021

- Developed a graph-based API using Python, Spark, and SQL able to proactively detect clusters of fraudulent synthetic accounts from amongst vast quantities of benign transactions.
- Created a python package using state of the art natural language processing techniques to mask personally identifying information from banking-related documents. Outperformed standard solutions including Microsoft Presidio and AWS Macie with $F_1 > 0.85$ on a human-built test set.
- Designed state of the art causal machine learning techniques to estimate the effect of physical risks such as flooding on the estimated value of homes alongside a user-friendly python API.
- Presented projects to the SVP of Global Cyber Security and VPs of Data Analytics, alongside submitting two patent applications for completed works.

PERSONAL PROJECTS

UBC Data Science Club - Founder & President

Sep 2021 - Present

- Launched the data science club, bringing in over 700 members to our large scale collaborative projects, in-depth artificial intelligence & deep learning workshops, and [our first conference](#).

UBC Bionics - Analytics Lead

Sep 2019 - Present

- Led a team of seven to improve the usability of powered-arm prosthesis through designing novel computer vision techniques, as well as an AI-powered brain computer interface. Competing internationally in ETH Zurich's [CYBATHLON 2024](#).

EDUCATION

University of British Columbia, Vancouver

Sep 2019 - May 2024

Faculty of Science, Honors Computer Science with Co-op

Cumulative GPA: **A**

Deans Honor List, Tuum Est Experiential Award, Science Undergraduate Research Experience Award

SKILLS

Python, PyTorch, Tensorflow, CUDA, Java, C, Git, Spark, SQL, Deep Learning, Statistical Modeling