

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 usage of machine learning models, improving process speed by a factor of 20.
- Assisted with demoing modern data science solutions to external clients with a non-technical background in deals in excess of \$1MM

The Vector Institute - Research Assistant May 2022 - Dec. 2022

- Designed state-of-the-art continual learning techniques for deployment in an augmented reality setting using PyTorch, leveraging RCNN and transformer-based machine learning architectures.
- Built a high-performance environment for rapid prototyping, training, and benchmarking of incremental object detection algorithms across three datasets, parallelized across the Vector GPU Cluster.
- Preparing an academic paper of findings for submission to leading computer vision conferences.

Royal Bank of Canada - Data Science Intern May - Aug. 2020 & Jan. - Aug. 2021

- Developed a graph-based API using PySpark able to quickly detect clusters of fraudulent synthetic accounts from amongst billions of benign transactions. Since deployment, the solution has solved multiple large-scale fraud cases with impacts of over \$100,000.
- 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 Sept. 2021 - Present

- Launched the data science club, bringing in over 600 members to our large scale collaborative projects, in-depth artificial intelligence & machine learning workshops, and [our first conference](#).

UBC Bionics - Analytics Lead Sept. 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 Sept. 2019 - May 2024

Faculty of Science, Honors Computer Science with Co-op

Cumulative Average: **A**, Deans Honor List, Tuum Est Experiential Award

QUALIFICATIONS

Proficient with: Python, PyTorch, CUDA, Java, C, Git, Spark, SQL, Machine Learning, HPC