

EDUCATION

- University of Alberta

BSc in Computing Science, Minor in Mathematics

Edmonton, AB

Graduated: 2024

Course Highlights:

Cellular Neuroscience, Clinical Neuroscience, Algorithms, Computer Vision, Database Management, Linear Optimization, Linear Algebra II, Machine Learning, Differential Equations, Reinforcement Learning, Statistics I

WORK EXPERIENCE

- Fatigue Science

Junior Software Engineer

Vancouver BC

Sept 2021 - Aug 2022

Specialized in back-end development of a web application for management of large workforce scheduling and metric reporting from wearable devices. Used by organizations such as NASA and the US Air Force.

Deployed APIs using Ruby and PostgreSQL, notably leading the integration of Fitbit profile syncing with our platform.

Created Python scripts to automate the modification of sleep actigraphy data.
- Blueberry

Junior Researcher

Toronto ON

Jul 2021 - Sept 2021

Processed functional near-infrared spectroscopy (fNIRS) data retrieved from a mobile headset using Python scripts.

Analysed data to map stress and exertion levels to fluctuations in mental states.
- APPLab – University of Alberta

Undergraduate Research Assistant

Edmonton AB

May 2019 - Sept 2019

Collaborated on the creation of a Python-based solution for synchronizing data from a portable Electroencephalography (EEG) system with physical button inputs.

Facilitated the integration of Raspberry Pi devices for mobile EEG data collection during physical activities, such as biking.

PROJECTS AND LEADERSHIP EXPERIENCE

- CMRxRecon

Research Project

Edmonton AB

May 2024 - present

Creating a Transformer-based model capable of general reconstruction of undersampled cardiac MRI across various contrasts, views, and acceleration trajectories.

Utilizing an unrolled optimization method to simultaneously learn from both the k-space and image domains.

Using the low-rank singular value decomposition of the image space as an embedding to draw attention to important areas.
- FieldVision

Computer Vision Capstone

Edmonton AB

Feb 2024 - Apr 2024

Developed a real-time tennis player tracker using Python, integrating Meanshift tracking with an Adaptive Kalman Filter.

Adapted parameter adjustments in the Kalman Filter based on detection confidence and occlusion conditions to improve accuracy in dynamic environments.

Leveraged homography transforms to map player positions onto a top-down representation of the field.
- Automated 3D Breast Ultrasound Segmentation

Research Project

Edmonton AB

Jun 2023 - Feb 2024

Created a nnUNet framework in PyTorch to automate tumor segmentation in 3D breast ultrasound volumes.

Utilized bash scripts to parallelize the training process on Compute Canada’s high-performance computing resources.
- Artificial Intelligence in Medical Systems Society

Treasurer / Event Operations Manager

Edmonton AB

Dec 2019 - Feb 2021

Collaborated in the creation of the club’s inaugural Artificial Intelligence in Medicine Symposium.

Set up info sessions and workshops with professors and local medical companies throughout the year.

SKILLS

Topics	Languages	Libraries & Tools
Scientific Computing	Python, Ruby, MATLAB	PyTorch, Linux
Deep Learning	SQL, Bash, C/C++	Git, NumPy, Matplotlib
Back-end Development	JavaScript, HTML, CSS	Docker, OpenCV, Jira