

SKILLS

- **Neuroimaging (Collection, Formatting, Cleaning/Preprocessing Pipeline, & Analysis):** fMRI, EEG, and fNIRS
- **Programming/Coding:** Linux, Python, PySpark, SQL, SPSS, R, MATLAB, BASH, HTML & CSS, VSCode
- **Machine Learning:** TensorFlow, Keras, Scikit-learn, PyTorch, supervised/unsupervised learning, convolutional neural networks, feature engineering, model optimization, Google Cloud Platform (GCP), and MLOps with Azure
- **Research Methodology:** quantitative & qualitative statistical analysis, experimental design, project planning and execution, problem-solving and troubleshooting, data interpretation and visualization; pandas, seaborn, matplotlib

EDUCATION

University of Western Ontario	Sept. 2022 – Dec. 2024
Master of Science (M.Sc.) - Cognitive, Developmental and Brain Sciences	London, ON, Canada
<ul style="list-style-type: none"> • Thesis title: “<i>Machine Learning for Prognosis of Acute Brain-Injured Patients in the ICU Using EEG Complexity Analysis and Naturalistic Narrative Stimuli</i>” • Supervisors: Dr. Adrian Owen & Dr. Derek Debicki 	
King’s University College	Sept. 2018 – Apr. 2022
Bachelor of Arts (B.A.) - Honours Specialization in Psychology	London, ON, Canada
<ul style="list-style-type: none"> • Thesis title: “<i>Cortical Function of Super Refractory Status Epilepticus: An fMRI Case Study</i>” • Supervisor: Dr. Loretta Norton 	

PROJECTS

MRI Image Segmentation of Mouse Kidneys and Bladders Link TensorFlow, Pytorch, Keras	Dec. 2023 – Jan. 2024
<ul style="list-style-type: none"> • Automated MRI image segmentation for kidney volume analysis in oncological mouse models. Achieved high accuracy and dramatic improvements to efficiency, reducing manual processing time from months to minutes. • Developed a custom U-Net convolutional neural network model; coded a multi-step encoder-decoder architecture and applied image augmentation to improve model robustness. • Model used to assess cancer progression in preclinical studies reliably. 	
EEG Complexity for Prognosis of ICU Patients Link Python, sklearn, feature engineering	Oct. 2022 – Aug. 2024
<ul style="list-style-type: none"> • Predicted future clinical outcomes of brain-injured coma patients with 80% accuracy (AUC = 0.80–0.83). Trained classification models using features extracted from patient EEG brain signals by optimal complexity algorithms. 	
HRF of ICU Patients with Simultaneous EEG-fNIRS Link TensorFlow, Optimization	Sep. 2022 – Oct. 2022
<ul style="list-style-type: none"> • Awarded a Provincial Scholarship for this project, which proposes the simultaneous integration of fNIRS and EEG to enhance the sensitivity of detecting brain activity in ICU patients. This method considers crucial underlying physiological mechanisms by estimating a patient's hemodynamic response function (HRF, with the calculation involving a gradient descent-based search algorithm that maximizes the correlation of fNIRS-EEG). 	

ADDITIONAL EXPERIENCE

Clinical Researcher – LHSC/Center for Brain & Mind , London, ON, Canada	Sept. 2022 – Dec. 2024
<ul style="list-style-type: none"> • Collected EEG, fNIRS, and fMRI data from ICU patients to investigate neural activity in critical care settings. • Implemented end-end machine learning pipeline on neuroimaging data to improve prognostic capabilities. 	
Teaching Assistant – University of Western Ontario , London, ON, Canada	Sept. 2022 – May. 2024
<ul style="list-style-type: none"> • Independently led tutorials for courses such as Research Methods 2801, where I instructed students to work with data, conduct and test hypotheses, and visualize and interpret data effectively. 	
Data Analyst – The Owen Lab , London, ON, Canada	Oct. 2021 – Aug. 2022
<ul style="list-style-type: none"> • Preprocessed and analyzed large datasets, applying advanced techniques for noise reduction, artifact removal, signal enhancement, statistical testing, data visualization, feature extraction, dimensionality reduction, etc. 	
Advanced Repair Agent – Best Buy , London, ON, Canada	Oct. 2020 – Dec. 2021
<ul style="list-style-type: none"> • Document, troubleshoot, diagnose, problem-solve, and fix issues with client computers. Maintained detailed records of procedures and transactions. Trained users in the proper use of hardware and/or software. 	
Team Lead – Kognitive Sales Solutions , Windsor, ON, Canada	Mar. 2018 – Jan. 2020
<ul style="list-style-type: none"> • Led a high-performing sales team during promotional events, driving product visibility and customer engagement. • Initially hired as a Field Marketing Representative, exceeded sales targets, and was promoted to Team Lead. 	