

Michael Montemurri

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EDUCATION

McGill University

Aug 2024 – Apr 2026

M.Sc. Mathematics and Statistics (GPA: 3.78/4.00)

Montréal, QC

- Supervised by Prof. Eric Kolaczyk.
- Thesis: Hybrid graph representation learning for molecular optical property prediction in low-data regimes
- Courses: Network Science, PGMs, Statistical Inference, Advanced Distribution Theory, Regression, GLMs.

Bowling Green State University

Aug 2019 – Apr 2023

B.Sc. Physics & Applied Mathematics (GPA: 3.99/4.00)

Bowling Green, OH

- Supervised by Prof. Mikhail Zamkov
- NCAA Division I Men's Soccer Team

EXPERIENCE

Mila – Quebec AI Institute

Aug 2024 – Present

ML/AI Research Student

Montréal, QC

- Designing hybrid deep learning and tree-based models to improve generalization in low-data graph prediction.
- Exploring pretraining strategies for graph-level prediction using GNNs and Graph Transformers.
- Executing large-scale model training and evaluation on GPU-accelerated HPC clusters.

Technologies: PyTorch, PyG, RDKit, DGL, HPC (Linux/Unix, Bash scripting, Slurm)

Morgan Stanley | U.S. Treasuries Desk (FID)

May 2025 – Aug 2025

Quantitative Strategist Summer Associate

Montréal, QC

- *Return offer accepted; joining full-time June 2026.*
- Collaborated with traders to develop a forecasting framework to predict client-level trading volume using market, macroeconomic, and seasonal signals.
- Applied regularized and tree-based regression methods, PCA, and unsupervised clustering for feature extraction and behavioral segmentation in time-series data.
- Delivered Python and KDB/q analytics pipelines integrated with the trading desk's workflow, to support daily client activity monitoring and strategy decisions.

Technologies: Python, KDB/q, Pandas, NumPy, Scikit-learn, Statsmodels, XGBoost, Plotly

South Essex Fabricating | Research and Development

Sep 2023 – Aug 2024

Data Scientist

Windsor, ON

- Developed a production-grade multimodal ML model for weekly crop-yield prediction by integrating image, climate-sensor, and harvest data, improving model accuracy by 23%.
- Fine-tuned and deployed YOLOv5 models for seedling detection and germination tracking through an internal Flask-SQL web application.
- Automated crop-monitoring pipelines with custom CV models, expanding sampling coverage fourfold.

Technologies: PyTorch, YOLOv5, OpenCV, Flask, SQL, Azure, Git

Zamkov Lab

Sep 2020 – May 2023

Research Assistant

Bowling Green, OH

- Studied shape-controlled synthesis and photophysical properties of colloidal quantum dots for solar energy applications, contributing to peer-reviewed publications and presenting findings at the 2023 ACS Conference.

Technologies: COMSOL, OriginPro, Excel

HONORS AND AWARDS

NSERC Canada Master's Scholarship: Valued at \$27,000/year (2025).

FRQNT Master's Scholarship: Valued at \$20,000/year (2025).

J. Robert Overman Scholarship: Awarded for highest departmental GPA (Physics, 2022; Mathematics, 2022).

CoSIDA Division I Men's Soccer Academic All-American Team (2022).