Michael Montemurri

mikemontemurri@gmail.com | Website | LinkedIn | Google Scholar | GitHub

Education

McGill University Aug 2024 – Present
M.Sc. Mathematics and Statistics (GPA: 3.78/4.00) *Montreal, QC*

- Supervised by Prof. Eric Kolaczyk.
- Thesis: Interpretable graph representation learning for molecular property prediction in low-data regimes using hybrid deep learning and tree-based models.
- 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, RDKit, DGL, HPC (Linux/Unix, Bash scripting, Slurm)

Morgan Stanley | U.S. Treasuries Desk (FID) May 2025 – Aug 2025
Quantitative Strategist Summer Associate *New York / Montréal, QC*

- 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).