Cody Mazza-Anthony

345 Gauchetiere W, Apt. 605 – Montreal – Quebec, Canada H2Z 0A2

(438) 998-5406 • cmazzaanthony@gmail.com • cmazzaanthony.github.io
cmazzaanthony • cody-mazza-anthony

Summary

• Expertise in **machine learning**, **optimization**, and **algorithm design**.
• Proficient in **Python** with extensive knowledge in `sklearn`, `pandas`, `numpy` and `xgboost`.
• 5+ years of work experience with 3+ years working in quantitative methods.

Work Experience

Quantitative Development Group: Machine Learning Team Lead **Montreal, Quebec, Canada**
Squarepoint Capital *Oct.' 19 – Present*

• Currently developing Auto-ML framework which includes exploratory data analysis, model fitting, hyperparameter optimization and model interpretation.

Technology Used: Python

Machine Learning Researcher (Intern) **Montreal, Quebec, Canada**
Squarepoint Capital *May' 19 – Sept.'19*

• Analyzed three different datasets consisting of a collection of assets and various features.
• Surpassed previous benchmarks using several state-of-the-art machine learning models.

Technology Used: Python

Quantitative Developer **Montreal, Quebec, Canada**
Squarepoint Capital *Oct.'17 – May'19*

• Worked directly with researchers to develop simulations and prototypes at the frontier of operations research.
• Designed and implemented objective functions for portfolio optimization.
• Constructed an algorithm trading framework for volatility products.

Technology Used: Python, C++

Software Engineer **Montreal, Quebec, Canada**
Squarepoint Capital *July'15 – Oct.'17*

• Designed analytics dashboard that reduced trading costs significantly by analyzing trade flow, exchange fees, and broker fees.

Technology Used: Python

Technology Associate **Montreal, Quebec, Canada**
Morgan Stanley *Dec.'15–July'15*

• Developed risk infrastructure and distributed computing grid for fixed income derivative products.
• Implemented shock and stress testing for fixed income derivatives.

Technology Used: C#, Java

Technology Analyst **Montreal, Quebec, Canada**
Morgan Stanley *Jan'14–Aug.'14*

• Delivered optimal Java server reporting engine to the Bank Deposits Team that manages $140 Billion in firmwide deposits.

Technology Used: Java, Python

Research Experience

McGill University **Montreal, Quebec, Canada**
Master's Thesis *2017–2019*

Research addressed the task of identifying densely connected subsets of multivariate Gaussian random variables within a graphical model framework. Demonstrated performance on gene expression and equities data.

• Proposed two novel estimators based on the Ordered Weighted ℓ_1 (OWL) norm: GOWL and ccGOWL.

• The Graphical OWL (GOWL) is a penalized likelihood method that applies the OWL norm to the lower triangle components of the precision matrix.

• The column-by-column Graphical OWL (ccGOWL) estimates the precision matrix by performing OWL regularized linear regressions.

Technology Used: Python, R

Projects

Gaussian Graphical Models
Free software package for graphical models in the Python programming language. Its main purpose is to allow for experimenting with state-of-the-art methods for learning structure in Gaussian Graphical Models.

coptim: Convex Optimization Library
A free software package for convex optimization in the Python programming language. Its main purpose is to allow for the application of state-of-the-art methods in smooth and non-smooth convex optimization.

Publications

Mazza-Anthony, C., Mazoure, B., Coates, M., 2019. Learning Gaussian Graphical Models with Ordered Weighted L1 Regularization. *arXiv preprint arXiv:1906.02719, 2019*. (submitted)

Smaoui, M.R., Mazza-Anthony, C. and Waldispühl, J., 2016. Investigating mutations to reduce huntingtin aggregation by increasing Htt-N-terminal stability and weakening interactions with PolyQ domain. *Computational and mathematical methods in medicine, 2016.*

Education

McGill University **Montreal, Quebec, Canada**
Masters of Engineering in Electrical Engineering (*with thesis*) *2017–2019*

• Relevant Coursework: Applied Machine Learning, Optimization,
Generalized Linear Models, Time Series Analysis, and Computationally Intensive Statistics.

McGill University **Montreal, Quebec, Canada**
Joint Bachelor of Computer Science and Biology *2010–2015*

• Relevant Coursework: Algorithms & Data Structures,
Computational Biology Methods, and Principles of Statistics

Honours & Awards

MITACS Accelerate Scholarship **2019**
McGill University, $15,000

Graduate Excellence Scholarship **2017**
McGill University, $5,000

Prestige Scholarship (Top International Scholarship) **2010**
McGill University, $40,000

Maple Leafs OFSAA Scholarship **2010**
Maple Leafs, $10,000