EVAN MISSHULA

https://github.com/EvanMisshula EvanMisshula@gmail.com, (917) 975-7039

SUMMARY

Highly skilled in applying policy gradient methods and stochastic control to solve complex problems in finance and criminal justice. Expertise in Python, R and statistical methods, with practical experience in both financial and non-financial risk management as well asportfolio optimization. Math BA from Yale, MA in the Mathematics of Finance from Columbia.

Education

MA in the Mathematics of Finance	February 2025 3.68 GPA
Columbia University, New York, NY	
ABD Criminal Justice	August 2014
CUNY Graduate Center, New York, NY	
BS Applied Math (Operations Research) and BA Economics & Mathema	atics May 1988
Yale University, New Haven, CT	

Research

- Preparing a manuscript on log-concave sampling with implications for embedded optimal transport and the theoretical limits of gradientdescent on highly non-linear manifolds (Supervisor Ioannis Karatzas, Columbia University Math Department)
- Preparing a manuscript on using a Large Language Model (LLM) to recreate part of the US Extremist Crime Database (US-ECDB) and measure shortfalls and Improvements (Supervisor – Hung-en Sung, CUNY Graduate Center)
- Deep mathematical expertise in stochastic control, optimal transport, policy gradient methods and reinforcement learning.

Experience

Instructor, Justice through Code

December 2024 - Present

The program's mission is to educate and nurture talent with conviction histories and create a more just and diverse workforce. Justice Through Code increases workplace equity through partnerships that educate and prepare teams to create supportive pathways to careers that end the cycle of poverty that contributes to incarceration and recidivism.

- Prepared lessons on machine learning, actor-critic models, policy gradient and reinforcement learning
- Teaching students to impliment and test models using Python and the PyTorch library.

Director of Data Integration, *Fortune Society* The Fortune Society's mission is to support successful reentry from incarceration and promote alternatives to incarceration, thus strengthening the fabric of our communities. The Fortune Society administers Supervised Release in the Bronx.

- Supervised the data integration of a caseload of 1,300 current clients and a contract of \$12 million over 3 years.
- Led the creation of reports for active clients, screenings, and cases under management for external funders and the Office of Court Administration.

Adjunct Professor, CUNY John Jay Math and Computer Science

July 2012 - December 2023

- Taught courses on Databases and Data Mining using SQL and Python.
 - Covered topics including Perceptron, Regression, Logistic Regression, Decision Trees, Random Forests, Neural Networks, Convolutional Neural Networks, Recurrent Neural Networks, Topic Analysis, and Causal Inference via Bayesian Structural Time Series.
 - Introduced Python data science packages such as Sci-Kit Learn, TensorFlow, Pandas, and SQL-Alchemy.
 - Included concepts from Functional Programming such as Functors, Monoids, Applicatives, Transitive Closure, Semigroups, Monads, and Monad Transformers.

- Incorporated projects using Postgres, Sci-Kit Learn, TensorFlow, SQLAlchemy, and Streamlit.

Data Scientist, New York Correctional Association (CANY) May 2019 - February 2022 CANY is the only independent organization in New York with statutory authority to monitor prisons.

- Led systemic survey development and facility reporting.
- Designed, supervised, and reported on 25 monitoring surveys covering services, procedural justice, health, prison economics, and interpersonal conflicts.
- Created a multi-threaded program in Python to obtain current locations and release status for NY State prisoners.

Senior Data Analyst, New York City Criminal Justice Agency (NYCJA) March 2018 - May 2019 NYCJA is the principal data repository and research agency for court data in NYC.

- Transformed NYCJA operations through Free Software and Machine Learning techniques.
- Demonstrated the economic impact of NYCJA's Desk Appearance Notification program via a 90-day Randomized Control Trial covering 1.2 million court appearances.
- Developed parsimonious, highly predictive models of failure to appear using Lasso Regression in R, achieving an AUC of 86.4%.

Data Scientist, Misdemeanor Justice Project (MJP)

October 2016 - March 2018

The MJP provides an empirical framework for data-driven policy initiatives aimed at improving society's response to low-level offenses.

- Estimated jurisdiction demographic populations using R libraries (Rgeos, Rgdal, geosphere, acs).
- Created demographic profiles for jurisdiction selection.
- Developed logistic regression models in R to predict legal insufficiency of NYC summonses over a 20-year period across 15 million records.

Freelance Projects:

- World Bank: Designed and created poverty maps to report on South African poverty density using Rgeos, Python, and QGIS.
- CMDTY Partners, LP: Taught investment professionals Python and programming.

Additional Experience in Finance:

- Goldman Sachs: VP Trading and Arbitrage, 1988 1993 Managed a book of convertible bonds to exploit short-term mispricings.
- **ING Bank:** VP International Convertible Sales, 1994 1996 Sold Emerging Market Convertible Bonds to US institutions.
- **HSBC Bank:** VP International Convertible Sales, 1996 1998 Sold Emerging Market Convertible Bonds to US institutions.
- ValueVest: Portfolio Manager, 1998 2000 Acquired and traded equity new issue securities in New York.

Volunteer Experience: Member, Society of Industrial and Applied Mathematics; International Association for Quantitative Finance; American Mathematical Society; Columbia University Criminal Justice Project-Coding@Rikers.

Skills

Programming: R (expert), Python (proficient)

Financial Mathematics: Expertise in Black-Scholes equation, Fourier Analysis, PDEs, and Lévy Processes

- Supervised Learning: Optimal Transport, Reinforcement Learning, Policy Gradient Methods, Stochastic Gradient Descent, Neural Networks, Information Geometry
- Unsupervised Learning: Factor Models, Principal Component Analysis, Topic Modeling, Anomaly Detection
- Functional Programming Concepts: Lambdas, Monads, Functors, Monoids