

Mark Ibrahim

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EXPERIENCE

New York, NY

Staff Researcher, Fundamental AI Research (FAIR) at Meta Superintelligence Labs

July 2019 – Present

- Researching methods to measure and improve [common sense](#) in multimodal LLMs and AI agents
 - Published 20+ research papers at top AI conferences, earning 3 spotlight awards & 1 oral (top 1%, ICML 2024)
 - Led team of 10 towards the development of [OpenApps](#) a research environment for computer use agents
- Co-author of [The Self-Supervised Learning Cookbook](#) with Randall Balestriero, Yann LeCun, and others
- Architected experiment launchers for distributed multi-GPU training for up to 12 billion data samples in PyTorch
- Advised 2 AI Residents, 5 research interns, and 4 visiting PhD students to [projects](#) featured by Meta/AI Conferences
- Instructor for Georgia Tech's Deep Learning course (+10k students); co-organized [ICML tutorial](#) with 400+ attendees

Senior Machine Learning Engineer, Center for Machine Learning at Capital One

Sep 2016 – June 2019

- Led Explainable AI team to build tools and research for explaining black-box deep learning models
 - Built open-source Python [library](#) to generate global explanations for neural network predictions
 - Published 2 interpretability research papers (NeurIPS workshop 2018 and ACM AAAI 2019)
- Engineered a real-time [notification](#) system for predicting mistaken charges on 10 million transactions per day
- Developed deep learning (RNN + LDA) customer archetype model in collaboration with Columbia Prof. John Paisley

Data Engineering Fellow (2016) & Technical Advisor, Insight Data Science

May 2016 – June 2018

- Developed a graph-based knowledge search engine (knowledgesearch.us) powered by Wikipedia
 - Distributed parsing of all 5 million articles using Spark on Amazon Web Services (AWS)
- Designed a D3.js user interface powered by a graph database (Neo4j), Elasticsearch, and Python (Flask)

Quantitative Portfolio Risk Analyst, UBS

Jun 2012 – Aug 2014

- Applied unsupervised machine learning (PCA) to identify \$570k in uncaptured sensitivity to a 0.01% move in rates
- Automated daily 2½ hour manual risk calculation for \$658 million trading portfolio in Python

SELECT RESEARCH

“AbstentionBench: Reasoning LLMs Fail on Unanswerable Questions”—*P Kirichenko et al. NeurIPS 2025.*

- cited in GPT-5's technical report & used by UK Security Institute's Inspect Evals

Multi-token training objective: “Which tokens you predict underlie the reversal curse”—*O. Kitouni et al., NeurIPS 2024.*

Multimodal training: “X-Sample Contrastive Learning with Similarity Graphs”—*V Sobal, Yann LeCun et al. ICLR 2025.*

“Does Progress On Object Recognition Improve Real-World Generalization?”—*M Richards et al. ICLR 2024.*

Patent: “Techniques to perform global attribution insights in neural networks”—*US Patent 16/855,685*

Select Talks: ML Collective & Flatiron Institute (2025), NeurIPS (2024), ICML Tutorial & ICLR Spotlight (2023), AAAI Spotlight Talk (2019), Tom Tom Machine Learning Conf (2018), [Data Driven](#) at George Washington U. (2017).

COMMUNITY

Researcher for the [AI-Powered](#) COVID-19 Forecasting [Data for Good](#) Program with Direct Relief non-profit org

Advisor for Columbia U. Data Science Masters Capstone (2019). **Co-organizer** Vermont Python User Group (2016)

EDUCATION

Statistics MicroMasters, Massachusetts Institute of Technology (MIT)

M.S. Mathematics, University of Vermont

Course Instructor: [Calculus I](#) (72 students) and [Calculus II](#) (38 students)

Honors B.A. Mathematics, *Magna Cum Laude*, Hamilton College

[19th Gold Scholar](#) for student of “highest standards.” *Phi Sigma Iota*: highest honor for foreign languages