

Michael T Moran

PH.D. | DATA SCIENTIST | HE/HIM

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Experience

Duo Security

New York, NY

SENIOR DATA SCIENTIST

June 2021—Present

- Enhancing how we provide simple, powerful access security by improving our threat and anomaly detection methodology

Human Security (née White Ops)

New York, NY

SENIOR DATA SCIENTIST

September 2020—June 2021

- Developed XGBoost model to identify persistent threat on compromised user devices while avoiding signal leakage, reducing adversarial adaptation and increasing operation recall without impacting human users
- Supported and trialed internal initiatives to integrate machine learning methods robustly into threat detection life cycle, including interpretability methods
- Created hierarchical cluster model to rapidly assess traffic in degraded signal environments for likely fraud activity

TECHNICAL LEAD

March 2019—December 2020

- Led an international team to develop brand new solutions to stop advertising fraud on Connected TV platforms, working closely with internal and external stakeholders and within cross-industry collaborations
- Integrated team best practices (OKRs, retrospectives, code reviews) and championed improved documentation processes
- Collaborated with data engineering team to improve maintainability and scalability of detection products (rules-based, statistical, and ML models) in production environments

DATA SCIENTIST

January 2019—August 2020

- Created persistent models identifying fraudulent activity within massive event data ($\approx 60B$ events per day), stopping millions of dollars from going to criminal operations
- Led counter-offensive against three large fraud operations and integrated statistical models into fraud detection and prevention systems
- Expanded anomaly detection, device and IP classification, and device fingerprinting to Connected TV-related environments

Gartner

Stamford, CT

DATA SCIENTIST

October 2017—December 2018

- Improved client engagement by 5% by integrating a reading history recommender system into the search ranking model
- Created pipeline (SQL, pandas, XGBoost) and post-training analysis framework (SHAP) to assess result efficacy and adversarial stability
- Ran and analyzed A/B tests to ensure that changes improved search KPIs (abandonment, engagement) and avoided drift

Insight Data Science

New York, NY

DATA SCIENCE FELLOW

June 2017—September 2017

- Developed a probabilistic PyMC3 model to predict MTA subway ridership changes due to station openings and closings
- Explored forecasting subway demand and crowding using multiple time series methods (additive models, ARIMAX)

University of Notre Dame

Notre Dame, IN

LECTURER, PYTHON FOR PHYSICISTS

June 2015, 2016

- Designed and led lectures on data analysis, Monte Carlo methods, and practical applications of Python for experimental uses
- Introduced standard scientific stack packages (Numpy, Scipy, Matplotlib) to students and focused on teaching best practices

Education

University of Notre Dame

Notre Dame, IN

PH.D. NUCLEAR ASTROPHYSICS

November 2018

M.S PHYSICS

August 2014

Michigan State University, Lyman Briggs College

East Lansing, MI

B.S. ASTROPHYSICS, B.S. PHYSICS, MATHEMATICS (MINOR)

May 2011

Volunteering

Section Leader

CS106A: **CODE IN PLACE**, OFFERED ONLINE BY STANFORD UNIVERSITY

Spring 2020, 2021