

# Michael T Moran, Ph.D.

New York, NY 10001

☎ 248-885-3581 | ✉ mmoran0032@gmail.com | 🏠 www.mmoran0032.com | 📱 mmoran0032 | 🌐 in/mmoran0032

## Work Experience

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### Data Scientist

January 2019 - PRESENT

WHITE OPS

New York, NY

- I stop bots

### Data Scientist

October 2017 - December 2018

GARTNER

Stamford, CT

- Built new search ranking package and model to improve search engine results (NDCG) and iteratively improved the model
- Improved client engagement by 5% by integrating a recommender system based on reading history into the search engine
- Wrote robust data processing and model training pipelines (SQL and Pandas) to support the recommender system and the search ranking model, and a post-training analysis framework to ensure the models were working sensibly
- Ran and analyzed A/B tests to ensure that changes to the models improved search KPIs (abandonment, engagement)

### Data Science Fellow

June 2017 - September 2017

INSIGHT DATA SCIENCE

New York, NY

- Developed a probabilistic Python and PyMC3 model to predict MTA subway ridership changes resulting from station openings and closings, where ridership shifts among stations and lines, which can be used to inform the impact of future closures
- Explored forecasting subway demand and crowding using multiple time series methods (additive models, ARIMAX)
- Built an online Flask dashboard backed by Postgres to display model results

### Research Assistant

January 2012 - May 2017

NUCLEAR SCIENCE LABORATORY, UNIVERSITY OF NOTRE DAME

Notre Dame, IN

- Led research group to measuring the first scientific results from a next-generation particle detector system
- Created analysis framework for research group to improve experimental analysis and allow for streamlined reproducible results

### Lecturer, Python for Physicists

June 2015, 2016

UNIVERSITY OF NOTRE DAME

Notre Dame, IN

- Designed and led lectures during the summer as part of the undergraduate research exposure program, including brand new courses on data analysis, Monte Carlo methods, and other practical applications of Python for experimental uses
- Introduced standard scientific stack packages (Numpy, Scipy, Matplotlib) to students and focused on teaching best practices

## Education

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### University of Notre Dame

Notre Dame, IN

PH.D. NUCLEAR ASTROPHYSICS

November 2018

### University of Notre Dame

Notre Dame, IN

M.S PHYSICS

August 2014

### Michigan State University, Lyman Briggs College

East Lansing, MI

B.S. ASTROPHYSICS, B.S. PHYSICS, MINOR: MATHEMATICS

May 2011