

# Matthew Moocarme

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## Experience

### Insight Data Science

Fellow

New York City

09/2016–Present

- Built *Jamify*, an app to recommend songs for musicians to play based on listening interests and skill level
- Developed a recommendation engine using latent semantic analysis, and logistic regression models to predict song difficulty with Python using data the *million song dataset* and *ultimate-guitar.com*
- Built a front end using Python, Flask, HTML, CSS, Javascript, D3, and stored data in PostgreSQL database

### The Graduate Center of CUNY

Graduate Student Researcher

New York City

09/2010–Present

- Developed novel theories and designed experiments that resulted in 4 peer-reviewed first-author publications
- Updated and taught the “Physics for Computer Scientists II” lab, that incorporated Python and Matlab to develop an understanding of physics, causal inference and communication of results via data visualization

## Independent Projects

**Creating Custom Playlists:** Developed and validated recommendation engines in Python and Spark to generate various types of playlist based on listening history

**Google Trends Predict Stock Returns:** Performed time-series analysis that incorporated Google trends/news into an ARIMA-GARCH model that gives 6% annual return on investment in R

**Has Vision Zero Worked?:** Analysed whether the campaign to reduce the number of NYC traffic injuries is successful using R and Tableau, with data-driven recommendations improved effectiveness

**Why All Country Music Sounds the Same:** Mined song data using BeautifulSoup and stored data with sqlite to compare country music with comparison to other genres in Python

**Data Science Specialization:** Coursera 10 course specialization using R

## Education

### The Graduate Center of CUNY: Expected Graduation December

Ph.D. Physics

New York, NY

2010–2016

### The Graduate Center of CUNY

M.Phil. Physics

New York, NY

2010–2016

### Queens College of CUNY

M.A. Physics

New York, NY

2010–2016

### California State University, Long Beach

B.Sci. Physics

Long Beach, CA

2006–2010

## Skills

**Languages:** Python, R, SQL, Matlab, Git, Spark,  $\LaTeX$ , HTML/CSS, JavaScript\*, Java\*

**Tools:** Tableau, NumPy, SciPy, Scikit-Learn, Pandas, Matplotlib, D3\*, Flask, Illustrator

\* Limited knowledge