Michael D. Harmon

New York – NY

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Experience

Data Science Fellow — **Sept. 2016 – Present**
Insight Data Science — *New York, NY*

- Created a Python web application for forecasting crime rates in New York City: `www.crimetime.online`
- Collected, cleaned and analyzed 10 years of geospatial crime data using SQL, Pandas and seasonal ARIMA.
- Built front end using Flask, HTML, CSS and deployed to Amazon web services.

Graduate Research & Teaching Assistant — **Sept. 2011 – Aug. 2016**
University of Texas at Austin — *Austin, TX*

- Developed finite element code in C++ to simulate photoelectrochemical solar cells and optimize cell design.
- Designed and implemented numerical algorithms that reduced computational run time by a factor of 24.
- Created testing framework and wrote documentation webpage: `www.michael-harmon.com/PECS`
- Taught 11 courses of 120 students in calculus, linear algebra, differential equations and scientific computing.

Open Source Software Contributor — **July 2016**
The deal.ii Finite Element Library — *Austin, TX.*

- Refactored the C++ library's solver for distributed linear algebra to be more efficient and added a unit test.
- The added functionality was immediately adopted by users and resulted in solve times that are $250\times$ faster.

Adjunct Instructor — **Sept. 2010 – May 2011**
Fisher College — *Boston, MA*

- Planned and taught four courses in algebra and basic statistics to over 60 under-resourced students.

Skills

Languages: Python, C++, Java, MATLAB, SQL, HTML, LaTeX
Tools: Git, NumPy, SciPy, Pandas, Scikit-learn, Matplotlib, Bokeh, Spark, Flask
Analysis: machine learning, statistics, regression, classification, random forests, time series analysis

Education

Ph.D. Computational Applied Mathematics — **Aug. 2016**
University of Texas at Austin — *Austin, TX*

M.S. Computational Applied Mathematics — **May 2010**
University of Texas at Austin — *Austin, TX*

B.A. Mathematics, Minor in Physics — **May 2007**
New York University — *New York, NY*

Brazilian Jiu-Jitsu

Experience: 17 years as competitor, 12 years coaching athletes to win local, national and world titles.
Titles: World Champion, $2\times$ Bronze at Pan Americans, $3\times$ New England Champion, Texas State Champion.