# Michael D. Harmon

New York – NY

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## Experience

**Data Scientist**                                                                                    **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.
- Created example for deal.ii's code gallery to teach users to write LDG methods in a distributed framework.

**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, CSS, LaTeX
**Data Science Tools**: Git, NumPy, SciPy, Pandas, Scikit-learn, Matplotlib, Bokeh, Spark, Flask
**C++ Tools**: STL, Boost, MPI, OpenMP, CMake, Eigen, VTK
**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*

## Other

**Brazilian Jiu-Jitsu:** 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.