

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× 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, LaTeX

Data Science Tools: Git, NumPy, SciPy, Pandas, Scikit-learn, Matplotlib, Bokeh, Spark, Flask

C++ Tools: Boost, MPI, OpenMP, CMake, Eigen, VTK, Doxygen

Analysis: machine learning, statistics, ensemble methods, time series analysis, numerical methods

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× Bronze at Pan Americans, 3× New England Champion, Texas State Champion.