

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 software to model nanostructured solar cells and performed simulations to optimize cell design.
- Designed and analyzed numerical algorithms in C++ that reduced computational run time by a factor of 20.
- Taught 11 courses of 120 students in calculus, linear algebra, differential equations and scientific computing.

Adjunct Instructor

Sept. 2010 – May 2011

Fisher College

Boston, MA

- Communicated mathematics to a non-technical audience by teaching four courses in algebra and statistics to over 60 under-resourced students.

Open Source Projects

The deal.ii Finite Element Library (dealii.org)

July 2016

- Added functionality to the C++ library's solver for distributed (MPI) linear algebra that made it 250× faster.

PhotoElectrochemical Cell Simulator (michael-harmon.com/PECS/)

May 2015 - June 2016

- Created multithreaded C++ software for researchers to simulate photoelectrochemical solar cells.

Skills

Languages: Python, C++, Java, MATLAB, SQL, HTML, LaTeX

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

Analysis: machine learning, statistics, regression, classification, random forests, clustering, time series analysis, numerical linear algebra, numerical 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: World Champion, 2×Bronze at Pan Ams, New England Champion, Texas State Champion