Michael D. Harmon

michael-harmon.com
(617) 480 5032 • mdh266@gmail.com
linkedin.com/in/michaeldavidharmon • github.com/mdh266

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 and cleaned 10 years of geospatial crime data using Pandas and stored in a SQLite database.
- Forecasted local crime rates using seasonal ARIMA models that are trained on police precinct data.
- Wrote unit tests, documentation, built front end using Flask, HTML, CSS and deployed to AWS.

PhD Researcher & 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: 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: STL, Boost, MPI, OpenMP, CMake, Eigen, VTK

Analysis: statistics, generalized linear models, classification, ensemble methods, time series analysis clustering, 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: World Champ., 2×Bronze at Pan Ams, 3×New England Champ., Texas State Champ.