

MICHELLE GILL, PH.D.

Data scientist, biophysicist

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📄 [curriculum vitae](#) and [publications](#)

🌐 [mlgill](#)

🌐 [themodernscientist.com](#)

in [michellelynnngill](#)

🐦 [modernscientist](#)

EDUCATION

Ph.D. Molecular Biophysics & Biochemistry

2006, Yale University, *New Haven, CT*

B.S. Biochemistry, Summa Cum Laude

2001, University of Kansas, *Lawrence, KS*

SKILLS

Programming: Python, Matlab, C, R, Shell

Big data: PySpark

Machine learning: Supervised and unsupervised algorithms, Clustering, Natural language processing, Principal component analysis, Recommender systems, Signal processing, Computer vision, Neural networks, Compressed sensing

Statistics: Regression (linear, logistic, non-linear), Monte Carlo simulations

Databases: PostgreSQL, MongoDB

Other: Unix, Git, AWS, Docker, Flask, LaTeX

AWARDS

- [Ruth L. Kirschstein National Research Service Postdoctoral Fellowship](#)
- [NSF Graduate Research Fellowship](#)
- [Barry M. Goldwater Scholar](#)
- Kansas Board of Regents full-tuition merit scholarship

EXPERIENCE

Senior Data Scientist

2016 – Present

Metis

- Designed and created Spark machine learning and NLP curriculum using self-made Docker containers
- Conducted corporate trainings focused on Python, Hive, and Spark
- Developed 12-week machine learning course for F100 company
- Co-instructed 12-week data science bootcamps
- Developed and conducted take home coding exercise to assist with interview preparation

Research Scientist

2014 – 2016

National Cancer Institute

- Developed [NESTA-NMR](#), which uses compressed sensing to enable up to 100X faster acquisition of large (~10 GB) experimental data sets
- Created website and [documentation](#) for NESTA-NMR
- Elucidated mechanisms of cancer pathway using high-resolution experimental techniques

Postdoctoral Research Fellow

2008 – 2014

Columbia University Medical Center

- Used Monte Carlo simulations to model effect of physical changes on enzyme activity
- Developed [MFOutParser](#), a Python library that parses a challenging text format, enabling 10X faster analysis times
- Member of team that studied anti-oncogenic associated mechanisms of substrate binding to AlkB, a DNA repair enzyme

Postdoctoral Research Fellow

2007 – 2008

University of Kansas

- Developed principal component analysis-based method to visualize changes in vaccine structure that are critical for efficacy

Consultant

2006 – 2007

The Boston Consulting Group

- Developed Excel-based statistical tools and Access database for organizational streamlining of pharmaceutical client
- Part of team that developed municipal bond investment strategy for financial services client
- Member of team awarded 2007 Global Strategy Olympics Prize for pharmaceutical client work

PRESENTATIONS & PROJECTS

- "[Learning from Text: Natural Language Processing with Python](#)", Tutorial, *ODSC East*, Boston
- Created [wine label recognition application](#) using computer vision
- [pdLSR](#) is a library for performing linear and non-linear least squares regression in a dataframe-aware fashion