MICHELLE GILL, PH.D.

Data scientist, biophysicist

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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 languages: Python, Matlab, C, R

Statistics: Linear regression, Logistic regression, Non-linear regression, Monte Carlo simulations

Machine learning: Natural language processing, Random forests, AdaBoost, Support vector machines, K-nearest neighbors, Principal component analysis, Latent semantic analysis, Latent Dirichlet allocation, K-means clustering, Computer vision, Compressed sensing

Databases: PostgreSQL, MongoDB

Other: Unix, Git, AWS, 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

Data Scientist **2016**
Metis
- Twelve week, immersive bootcamp involving five self-designed data science projects
- Predicted profitability of movies passing the Bechdel test
- Location of Zika outbreaks predicted using supervised machine learning
- Analyzed expert wine reviews using natural language processing
- Used computer vision to develop a wine label recognition application
- Concurrently served as a teaching assistant while attending bootcamp

Research Scientist **2014 – 2016**
National Cancer Institute
- Developed NESTA-NMR, which enables 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

OTHER PROJECTS

- Co-author of in-progress, introductory Python book called "Unix and Python to the Rescue!"
- pdLSR is a library for performing linear and non-linear least squares regression in a dataframe-aware fashion