# MICHELLE GILL, PH.D.

# Data scientist, biophysicist

■ New York, NY

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curriculum vitae and publications

nlgill ?

themodernscientist

in michellelynngill

## **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 algorithms, Clustering, Natural language processing, Principal component analysis, Signal processing, Computer vision, Neural networks, Deep learning, Compressed sensing

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

Databases: PostgreSQL, MongoDB, GraphQL

**Other:** Unix, Git, AWS, Docker, Kubernetes, 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 Machine Learning Engineer Senior Data Scientist

2019 - Present 2018 - 2019

BenevolentAI

- Used matrix factorization to understand the importance of drug mechanisms in disease-target predictions
- Utilized deep learning (3D CNNs) and chemoinformatics to predict ligand pose and affinity for a given target
- Toolkit: Python, Docker, Kubernetes, PyTorch, RDKit

# **Senior Deep Learning Consultant** *NVIDIA*

2017 - 2018

- Designed and implemented proof-of-concept experiments and DL pipeline for clients in pharmaceutical, materials science, and consumer products industries
- Automated setup and maintenance of AWS infrastructure for client work

## Senior Data Scientist

2016 - 2017

Metis

- Conducted corporate trainings and co-instructed 12-week bootcamps focused on Python and Spark
- Developed 12-week machine learning course for F100 company and Spark machine learning and NLP curricula

#### **Research Scientist**

2014 - 2016

National Cancer Institute

- Developed <u>NESTA-NMR</u>, which uses compressed sensing to enable up to 10X faster acquisition of large (~10 GB) experimental data sets
- Created website and documentation for NESTA-NMR

### Postdoctoral Research Fellow

2008 - 2014

Columbia University Medical Center

- Used Monte Carlo simulations to model effect of physical changes on enzyme activity
- Studied anti-oncogenic associated mechanisms of substrate binding to AlkB, a DNA repair enzyme

#### 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**

- "Accelerating the journey from data to medicine", NeurIPS Expo, 2018, Montreal, Canada
- "Artificial intelligence as a catalyst for scientific discovery", *JupyterCon*, Invited Keynote, 2018, New York, NY
- "From structural biology to AI: a holistic approach to studying molecular machines", Brookhaven National Laboratory, Invited Presentation, 2018, Upton, NY

Updated: 05/20/2019

Current version: https://resume.michellelynngill.com