

JoshuaFriedman PhD

Data Scientist

contact

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machine learning

logistic regression
random forest
pca
naïve bayes
neural network
k-means clustering

science

computational biology
magnetic resonance
synthetic biology
dna damage repair

recognition

placed in top 4% of
"data incubator
program" applicants

programming

python: scikit-learn, pandas, numpy, scipy, flask, matplotlib, cython
database: postgresSQL / postgis, mongodb, json, hdf
matlab: signal processing, optimization toolbox
web: html, javascript, d3.js | **general:** git, regex, linux, c++

experience

- | | | |
|-----------|---|----------------|
| 2013–Now | NYU Langone Medical Center
<i>Department of Radiology</i>
• Developed memoized algorithms providing 10x speed-up in the numerical simulation of magnetization transfer in-vivo, allowing real-time optimization of MRI experiments.
• Implemented L1-norm reconstruction algorithms reducing MRI data acquisition time 50%.
• Authored fitting package for MATLAB & Python/Cython that uses L-BFGS-B to extract model dependent parameters from experimental data. | New York, NY |
| 2014–2015 | Department of Defense -- Research Directorate
<i>Science & Technology Policy Fellow AAAS</i>
• Helped secure \$400 million for bilateral research in quantum science & technology with the United Kingdom Ministry of Defence.
• Briefed senior DoD officials on synthetic biology, quantum science, and compressive sensing. | Washington, DC |
| 2011–2013 | University of Washington
<i>Institute for Protein Design</i>
• Developed Naïve Bayes & Simulated Annealing optimization routines in C++ for a protein structure prediction and design commercial software package. | Seattle, WA |

independent projects (selected)

NYC Taxi Geospatial analysis on 28 Gb of NYC taxi trip records. [Link to analysis.](#)
Kaggle Homesite Insurance Engineered features and trained AdaBoost classifier to predict home insurance sales scoring 95.8% on public leaderboard.

education

- | | | |
|-----------|---|--------------------------------------|
| 2005–2011 | PhD Biophysics
Authored 8 research publications (Nature, Biochemistry, JACS, <i>et al.</i>) and a book chapter on DNA repair Received US patent for MRI technology that is now found on commercial MRI scanners. | Johns Hopkins University |
| 2001–2005 | BS Biochemistry & Molecular Biology | Pennsylvania State University |