JoshuaFriedman PhD

Data Scientist

contact

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machine learning

logistic regression
random forrest
pca
nïave 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: postgreSQL / 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** New York, NY
Department of Radiology

- 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 & Pyton/Cython that uses L-BFGS-B to extract model dependent parameters from experimental data.

2014–2015 **Department of Defense -- Research Directorate** Washington, DC
Science & Technology Policy Fellow AAAS

- 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.

2011–2013 **University of Washington** Seattle, WA
Institute for Protein Design

- Developed Naïve Bayes & Simulated Annealing optimization routines in C++ for a protein structure prediction and design commercial software package.

independent projects (selected)

NYC Taxi Geospatial analysis on 28 Gb of NYC taxi trip records. Click here to see more.
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 **Johns Hopkins University**
Authored 8 research publications (Nature, Biochemistry, JACS, *et al.*) and a book chapter on DNA repair | Received US patent for MRI technology that is now found on commercial MRI scanners.

2001–2005 **BS** Biochemistry & Molecular Biology **Pennsylvania State University**