

## Education

- **Cornell University** Ithaca, NY  
*Ph.D. Applied Mathematics, M.S. Computer Science* 2008 - 2012
  - Department of Energy Computational Science Graduate Fellow (Full Scholarship, 4 years)
  - Machine Learning, Data Science, Data Mining in bioinformatics and global optimization
- **Oregon State University** Corvallis, OR  
*B.Sc. Mathematics, B.Sc. Computational Physics, B.Sc. Physics* 2004 - 2008
  - Graduated Magna Cum Laude with minors in Actuarial Sciences and Mathematical Sciences

## Research and Work Experience

- **SigOpt Inc - <https://sigopt.com>** San Francisco, CA  
*Co-founder and CEO* November 2014 - current
  - Helping lead a world class team to eliminate expensive trial and error from every experts workflow. Using cutting edge optimization behind a simple API to help tune machine learning models and build better products in a variety of fields.
- **Yelp Inc** San Francisco, CA  
*Data Mining Engineer and Lead on Ad Targeting Team* July 2012 - December 2014
  - **Optimization:** Co-developed and led team for MOE: the Metric Optimization Engine ([github.com/Yelp/MOE](https://github.com/Yelp/MOE), an **open source** optimization framework), found significant gains in different metrics across the organization using Bayesian Global Optimization algorithms.
  - **Targeting:** Implemented multi-armed bandit strategies for ad selection, sole targeting engineer on mobile app ads rollout, developed new location-based targeting algorithms, advised and helped develop other machine learning and math based targeting projects.
  - **Recruiting:** Created, implemented, and directed [yelp.com/dataset\\_challenge](https://yelp.com/dataset_challenge), gave tech talks across the country, led events, gave hundreds of technical interviews, closed candidates.
- **Bloomberg LP** New York, NY  
*Financial Software Development Intern* Summer 2011
  - Implemented statistical models to perform forward and backward portfolio analysis
- **DOE Joint Genome Institute (Lawrence Berkeley National Lab)** Walnut Creek, CA  
*Researcher in Analysis Group under Dr. Zhong Wang* Summer 2010
  - Used machine learning to mine TBs of genome data efficiently using novel likelihood function
- **Los Alamos National Laboratory** Los Alamos, NM  
*Researcher in Metagenomics Group under Dr. Nick Hengartner* Summer 2009
  - Used statistical models to discover sequence alignments using parallel algorithms on GPUs
- **Oregon State University** Corvallis, OR  
*Research Assistant under Prof. Malgorzata Peszynska and Prof. Rubin Landau* 2005-2008
  - Finite element analysis with uncertainty and web-based teaching in Java

• **Max Plank Institute for the Physics of Complex Systems**

• *NSF REU Research Assistant under Prof. Steven Tomsovic*

– Research on extreme value statistics in MATLAB and FORTRAN

Dresden, Germany

*Summer 2007*

• **University of California: Davis**

• *NSF REU Research Assistant under Prof. Daniel Cox*

– Computational biophysics research as applied to protein folding in Java

Davis, CA

*Summer 2006*

## Writing and Awards

- **2016 Forbes 30 Under 30:** Enterprise Tech. <http://onforb.es/10ILpBZ>
- **Department of Energy Computational Science Graduate Fellow:** Four year full fellowship. ~20 awarded nationally per year. Won the Communicating Science award ([bit.ly/VbcTZK](http://bit.ly/VbcTZK)).
- **SigOpt Blog:** Posts talking about using SigOpt to optimize everything ([blog.sigopt.com](http://blog.sigopt.com)).
- **Yelp Blog:** Wrote several posts announcing the open sourcing of MOE, the Yelp Dataset Challenge and more. [bit.ly/1x73xdr](http://bit.ly/1x73xdr), [bit.ly/1oCCZvv](http://bit.ly/1oCCZvv), [bit.ly/1s0sEBS](http://bit.ly/1s0sEBS), [bit.ly/1plX7Hk](http://bit.ly/1plX7Hk)
- **Press:** WSJ: [on.wsj.com/Va0vqQ](http://on.wsj.com/Va0vqQ), Cornell: [bit.ly/1oB2dzm](http://bit.ly/1oB2dzm), DIEXIS: [bit.ly/1oofb14](http://bit.ly/1oofb14)

## Skills

- **Numerical Analysis and Computer Science:** Machine Learning, Data Mining, Optimization, Computational Science, Artificial Intelligence, Linear Algebra, Monte Carlo Methods, ODEs, PDEs, Iterative Methods, Parallel Programming, Distributed Systems, Data Structures
- **Tech Stack:** Python, numerical libraries, linux, git, vim
- **Public Speaking:** I've given several hundred technical talks to audiences at machine learning conferences, Fortune 500 boards, and beyond.
- Exploring and implementing ideas. Give me an API/dataset and a problem and I will figure it out.

## Selected Open Source Projects

- **SigOpt Examples** ([github.com/sigopt/sigopt-examples](https://github.com/sigopt/sigopt-examples)) Python  
*Examples of using SigOpt to tune ML algorithms.* 2014 - current  
– Examples of using SigOpt to tune everything from sklearn to beating Vegas and beyond.
- **MOE: Metric Optimization Engine** ([github.com/Yelp/MOE](https://github.com/Yelp/MOE)) Python, C++, CUDA  
*A global, black box optimization engine for real world metric optimization* 2010 - 2015  
– Implemented throughout Yelp, optimizing ad metrics. 2nd most popular open source project.  
– Talk: [bit.ly/1p1YZA2](http://bit.ly/1p1YZA2), Slides: [slidesha.re/1z0r0Jy](http://slidesha.re/1z0r0Jy), Blog: [bit.ly/1x73xdr](http://bit.ly/1x73xdr)  
– Presented to executives, universities, conferences and companies around the country.
- **ALE: Assembly Likelihood Estimator** ([github.com/sc932/ALE](https://github.com/sc932/ALE)) C, Python  
*Probabilistic evaluation of genome assemblies* 2010 - 2013  
– Uses statistical function to score and rank genome assemblies, published in Bioinformatics