

# Derek Larson

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## EDUCATION

### UNIV. OF CA - SANTA CRUZ

Ph.D. Physics

June 2009 | Santa Cruz, CA

Dissertation: [Monte Carlo Studies of Disordered Spin Systems](#) [↗](#)

### UNIV. OF MN - TWIN CITIES

B.S. Physics and Mathematics

May 2003 | Minneapolis, MN

## SKILLS

### LANGUAGES

- Python ★★★★★
  - Pandas, Numpy, SKLearn
- StandardSQL ★★★
- JS (React) ★★★
- C/C++ ★★★

### SOFTWARE

- JupyterLab ★★★★★
- Plotly ★★★★★
- TensorFlow ★★★

### ACADEMIC

- Machine Learning ★★★★★
  - XGBoost, Deep Learning
- Monte Carlo Methods ★★★★★
- Statistics ★★★★★

### SYSTEMS

- Linux ★★★★★
- Docker ★★★★★
- GCP ★★★
- Kubernetes ★★★

## COMPETITIONS

- Galaxy Zoo [↗](#)
  - Computer Vision, CNN
  - Rank: 23rd of 326

## INTERESTS

- Travel Blog [↗](#)
- Classical Piano [↗](#)
- Baking [↗](#)

## EXPERIENCE

### SOJERN | Manager of Data Science Engineering

March 2015 - July 2019 | San Francisco, CA

#### *Optimizing Ad Audiences via Machine Learning*

- A ML pipeline tranching users by a quality score based on web history
- I took over an ongoing effort, redesigned it for new model types and speed
- Our A/B tests demonstrated 25% cost reduction across enterprise clients
- Improved pipeline efficiency 1000x (it didn't start very efficient ;)

#### *Automated Optimization System for Enterprise Ad Campaigns*

- Predicts and adjusts performance, provides alerts and insights
- I led the engineering effort as primary designer and developer
- Managed \$100M of spend and outperformed humans by 3x on KPIs

#### *Platform for dynamically creating and managing custom advertising audiences*

- Allows users to specify their own audience logic with 1-click deployment
- I pitched the project, designed a metalanguage and built the backend
- Freed up 2-3 full-time engineers from coding the same audiences manually

Roles held:

- Manager of Data Science Engineering (1 year, 1 hire, 1-5 reports)
- Staff Data Science Engineer (6 months)
- Lead Data Science Engineer (1 year)
- Data Science Engineer (2 years)

### NATIONAL TAIWAN UNIVERSITY | Postdoctoral Researcher

February 2010 - October 2012 | Taipei, Taiwan

#### *Study of supersolids using Quantum Monte Carlo simulation methods*

- [Tuning the Disorder in Superglasses](#) [↗](#)
- Pioneering work regarding coexistence of glassy and superfluid phases.
- Implemented two Quantum Monte Carlo algorithms in C++.

## PROJECTS

### BENTO | Plotly.js Plotly Dash Jinja2 | Github [↗](#)

August 2020

Quickly build interactive dashboards in Python! Bento works as an abstraction layer and templating engine on top of Plotly Dash, allowing a user to decide between prefab widgets instead of building from bare components. See the [gallery](#) [↗](#) for samples!

### ALEPH | React.js Flask Dagre | Github [↗](#)

January 2020

Aleph is a prototype graph-based UI. The fundamental principle: make a directed graph the centerpiece of the user experience, allowing a better visual and contextual interaction for many engineering tasks. Imagine interacting with a (live) data pipeline in this fashion.

### NNGEN | Python Theano | Github [↗](#)

January 2015

My first GitHub project, nnGen was a precursor to Keras. It allows users to design neural network architecture with a simple syntax. I used it to compete in a few Kaggle competitions.