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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.