Randall Lin: randalllin92@gmail.com **last updated: December 7, 2020**

Education

California Institute of Technology

Bachelor of Science in Physics and minor in Computer Science

Work Experience

Labelbox **April 2020 - present**

Lead Machine Learning Engineer

- Increased usage from **50K annotations/month to 2.5MM/month** while decreasing from **50 user errors/month to 0/month** of Model-Assisted Labeling feature via production of thought leadership content, an SDK redesign to improve ease of use, speedup of processing time
- Provided the product team with a unified vision of a differential diagnosis platform for machine learning models
- Drove down the number of unanswered questions for sales and support colleagues during their customer calls by providing weekly machine learning talks geared towards a nontechnical audience

Fathom Health **February 2017 - April 2020**

Machine Learning Team Lead

- **Reduced training time by more than 64x** and **increased acceptable context length by 10x** using a bespoke Transformer-based model adapted for training over 500MM long documents on TPUs.
- **Saved developers tens of minutes per day** by building an on-demand, autoscaling, sandboxed, Gitflow-driven machine learning experimentation platform using Airflow and Kubernetes (see talk given at Apache Airflow Meetup: Airbender - Combining Kubernetes, Airflow, and Github)
- **Decreased data acquisition costs by $X00,000** by de-identifying 12MM medical records via training a CNN-based model with no labeled data using weak supervision and active learning.
- **Ensured attainment of SOC 2 Compliance** by designing and implementing compliance specific monitoring of data access and cloud infrastructure modification.
- Developed and maintained machine learning model responsible for performing medical coding for a key customer covering 70% of all radiology medical records in the U.S.
- Designed and led the development of inference service integration with major customer EHRs.
- Fine tuning and feature engineering of various NLP DNNs (BERT, Transformer, Seq2Seq, CNN, and BLSTM models).

Halo Neuroscience **June 2014 - February 2017**

Senior Research Engineer

- Lead on massive online cognitive motor clinical trials design via both Amazon Turk and Reddit campaigns
  - Automated generation of bespoke osu! beatmaps
  - Experimental playground for basic MOBA hotkey sequencing
- Built bespoke sports lab style equipment for cognitive motor experiments
- Inception and complete development of
  - hardware test suite of Bluetooth and board integrity using Python and AWS Redshift and Lambda
  - a human factor model to determine range of motor cortex targeting for the Halo Sport tDCS device
  - a novel tripartite synapse model of tDCS
  - a full motor unit stack model of the functional effects of tDCS

Tech

Languages: Python, Tensorflow, Matlab, Mathematica, NEURON

Tools: Unix, Airflow, Kubernetes, Forseti

Cloud: various Google Cloud Platform products

Talks

Apache Airflow Meetup: Airbender - Combining Kubernetes, Airflow, and Github

Papers

Lin R, Cates A, Wingeier B. Positional accuracy of scalp electrodes mounted on a ready-made band targeting motor cortex. *Proceedings in Brain Stimulation*, 2017.

Østman B, **Lin R**, Adami C. Trade-offs drive resource specialization and the gradual establishment of ecotypes. *BMC Evolutionary Biology*, 2014, 14:113. http://www.biomedcentral.com/1471-2148/14/113

Patents

"Electrode system for electrical stimulation," US Patent #9,486,618.

"System and Method for Individualizing Neuromodulation," US Provisional Patent #62/129,167.

Research Fellowships

Harvard University

Gabriel Kreiman — **SURF Fellow 2013**

Investigated the role of spike timing dependent plasticity rules in canonical visual subcircuitry construction and discovered human visual response in ECoG microwire arrays.

California Institute of Technology

Christof Koch (now at the Allen Institute for Brain Science) — **SURF Fellow 2011-12**

Explored and constructed various information theoretic measures in order to characterize synaptic information efficacy as a way to illuminate dendritic nonlinearities in NEURON *models.*

Julia Kornfield — **FSRI Fellow 2010**

Built a rig from latex gloves and household carbonator and measured the effects of aging on foam fractionation of lactoferrin.

Keck Graduate Institute — **June 2008 to January 2010**

Christoph Adami (now at Michigan State University) — **NSF REU 2009**

Verified resource specialization of sympatric asexual digital organisms observed in AVIDA via a separate mathematical model.

Awards

The Stamps Family Charitable Foundation

Stamps Leadership Scholars — **2010-2014**

Four year full-ride merit scholarship and additional $15,000 enrichment award.