Frederick Robinson

San Francisco, CA
☎ *321.613.8838*
✉ *frederick.robinson@gmail.com*

Employment

2017-present **Senior Applied Scientist**, *Amazon AWS - Interactive Video Service*, Twitch.
- Mentored three other applied scientists, helping them improve engineering skills, leading to one being promoted.
- Trained, designed, and productionized realtime machine learning model to optimize data center selection for video playback, reducing global video buffering rates by >1%.
- Created streaming fraud detection machine learning system, improving fraud detection by more than 75% for problematic channels.
- Implemented first mathematical-model based method for transcode server configuration, improving server hardware utilization by >5%.
- Wrote production golang code for backend service serving >50k RPS.
- Created machine learning system for predicting optimal video player settings.

2014-2017 **Software Engineer**, *Google, Inc. - Display Ads*, Remarketing Quality.
- Developed end-to-end real-time bidding system calibrated by offline auction simulation.
- Built models to optimized advertiser ROI by learning advertiser-specific bidding strategies.
- Implemented offline MapReduce-based training pipeline.
- Wrote and maintained production pipeline and monitoring.
- Enabled additional traffic expansion worth tens of millions in incremental annual revenue.
- Trained models to improve CTR on multi-product ads.

2012-2014 **Teaching Assistant**, *University of California, Los Angeles*.
Conducted recitations for undergraduate classes - Calculus, Differential Equations, C++

Education

2014 **Master of Arts in Mathematics**, *University of California Los Angeles*.

2012 **Bachelor of Arts in Mathematics with Honors**, *Northwestern University*.

Skills

Languages — Golang, Python, C++

Technologies — AWS, CDK, Flume, MapReduce, SQL, Spark, Terraform

Skills — Machine Learning, Data Pipelines

Research Experience

2011 **Indiana University Research Program**, *NSF funded project investigating phylogenetics with Prof. E Housworth.*

2010 **Number Theory Research**, *Researched cyclotomic integers under Prof. F. Calegari funded by NSF grant.*

Publications

Frederick Robinson and Michael Wurtz. On the magnitudes of some small cyclotomic integers. *Acta Arithmetica*, 160(4):317–32, 2013.