

## EDUCATION

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- **Stanford University** Stanford, CA  
*PhD in Computer Science: Efficient Algorithms for Personalized PageRank* 2011 – 2015  
Published in NeurIPS, KDD, PVLDB, WSDM, SIGMOD
- **University of Minnesota** Minneapolis, MN  
*BS in Computer Science and Mathematics, Summa Cum Laude* 2007 – 2011

## EXPERIENCE

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- **Stripe** San Francisco, CA  
*Staff Engineer, Machine Learning* Oct 2016 - April 2022
  - **Impact Highlights:** In 2021, I discovered an optimization to eliminate **\$1 billion a year** of false positive blocked payments and led a project to implement it. In 2019-2021, I saved Stripe **\$20 million / year** in costs by building two ML systems that blocked card checking fraud. In 2017, I implemented ML features for Stripe's main fraud product that blocked **30% more fraud** than the previous ML system at the same false positive rate.
  - **Role:** I had a mix of IC and **tech lead** roles. As an IC, I designed and built **ML systems start-to-finish:** identifying business problems, working with impacted teams, prototyping models, building data pipelines, training production models, and monitoring key metrics. As tech lead I prioritized projects, coordinated with partner teams, wrote project briefs, reviewed project briefs across my org, and mentored several engineers.
  - **Deep Learning:** I used TensorFlow JS to prototype computer vision systems for verifying photo IDs. I used PyTorch, TensorFlow, and XGBoost to build fraud detection models.
  - **Recognition:** My cost-saving work was **recognized by Stripe's CEO** at a company-wide meeting. My team of three won the Stripe 2019 hackathon. I was **promoted twice** in five years.
- **Teapot (a startup acquired by Stripe)** Palo Alto, CA  
*Software Engineer* 2015 - Oct 2016
  - **Deep Learning:** I created a face recognition system that applied a deep learning model to billions of public face images, indexed the latent vectors for nearest neighbor search, and served an API to find pictures of a given person.
  - **Large-scale Graph Infra:** I created a graph library that computed shortest paths in real-time on graphs with 30 billion edges. I created a custom memory allocator in Scala on top of memory mapped files which allowed it to load 200GB graphs almost instantly and was more scalable than the graph library Twitter used at the time.
- **LinkedIn** Mountain View, CA  
*Intern, Machine Learning Research* Summer 2014
  - **Machine Learning:** Prototyped a new news-feed ranking algorithm that automatically segmented users.
- **Concept.io (a startup acquired by Apple)** Palo Alto, CA  
*Intern, Machine Learning* Summer 2013
  - **Machine Learning:** Designed and implemented a podcast recommendation algorithm based on matrix factorization.
- **Google** Mountain View, CA  
*Intern, Algorithms Research* Summer 2012
  - **Data Mining:** Implemented a scalable algorithm for explaining changes in Google's metrics.

## SKILLS

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- **Languages:** Scala, Java, Python, JavaScript, Ruby, SQL, C++
- **Technologies:** TensorFlow, PyTorch, XGBoost, Spark, Hadoop, AWS, Airflow, Kafka, Redis
- **Expertise:** Machine Learning, Deep Learning, Computer Vision, Data Mining, Algorithm Design, Technical Leadership, Optimizing Business Metrics