

David Ding

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EXPERIENCE

Cockroach Labs

NYC / Remote; 08/2021 – Present

Member of Technical Staff

- Technical lead of the Cloud Platform team. My team is responsible for managing 1000s of CockroachDB clusters, fully handling orchestration and customer-requested operations on AWS, GCP, and Azure, while keeping the whole fleet modernized. Beyond coding, I am responsible for providing technical guidance to my team's 10 engineers and many others, planning team direction, and balancing the constant pull between product requests and engineering health work.
 - Designed, implemented, and owned various Cockroach Cloud features required by our largest customers, **directly unblocking huge amounts of revenue**. These features were: Azure-hosted clusters, customer-managed encryption keys, physical cluster replication, and a custom Kubernetes operator for self-hosting CockroachDB, which also underpins our entire managed fleet.

Citizen App

NYC / Remote; 2018 – 02/2021

Senior Backend Software Engineer

- Engineering lead of the platform stability team: designed cost-effective infrastructure that could handle unpredictable extreme spikes in traffic.
 - **Maintained 99.95% uptime**. Introduced rate limiting, separated out vital systems into isolated microservices, stabilized our video stack, replaced the CDN in front of our main API, and more.
 - **Reduced infrastructure costs by 50%**. Doing this included programmatically detecting and rewriting bad DB queries, cutting away half of our DB replicas, adjusting inefficient uses of CPU, memory, and autoscaling.
- Engineering lead of the COVID Safety team: helped people safely navigate a COVID-19 world.
 - Built the backend for USA's most widely used contact tracing app, SafePass, with **over 1M users**. Steered through volatile societal conditions, and official collaborations with various governments, Apple, and Google, to a successful launch. Notified people of **1000s of potential exposures**.

Google

NYC / Bay Area; 2014 – 2018

Software Engineer

- My team took noisy Google Maps updates from numerous sources, like ad feeds and user edits, and auto-matched them with existing businesses, ensuring that business listings appear exactly once.
 - Achieved a **30% relative gain** in pipeline precision to over 90% (while maintaining recall), by improving, retraining, and maintaining the ML model, and engineering thread-safe model features with 2-second p99 latency and 100MB footprint constraints.

ML Research Apprentice

- **Published a paper** ([arXiv:1709.06680](https://arxiv.org/abs/1709.06680)) on interpretable ML models: specifically, extending existing highly interpretable lattice-based models to deeper and more flexible neural networks.

EDUCATION

Columbia University

M.S.; Machine Learning; GPA 4.0/4.0

2014 – 2016

California Institute of Technology

B.S.; Mathematics and Computer Science; GPA 4.0/4.0

2010 – 2014

TECHNICAL SKILLS (MOST → LEAST PROFICIENT)

- **Languages:** Go, Python, C++, C, Scheme, JavaScript
- **Tools:** Kubernetes, GCP, AWS, Azure, Redis, Git, TensorFlow, \LaTeX