
WORK EXPERIENCE

- **Scope3 (Advertising Sustainability Platform)** Jan 2022 – Present
Co-Founder & CTO New York, NY / Remote
 - **Co-founded advertising sustainability platform** as one of 3 founding engineers, architecting first-ever carbon emissions model for digital advertising using graph-based supply chain analysis.
 - Built foundational data pipeline and high-throughput API platform using **Airflow, BigQuery, Dataflow, Pub/Sub, and Google Kubernetes Engine**, enabling transition from manual file delivery to programmatic access for enterprise clients and major ad tech companies.
 - Led technical strategy enabling **\$45M raised across two Series B rounds** from Google Ventures by demonstrating platform scalability and infrastructure reliability to board of directors as CTO.
 - Scaled engineering organization from 3 founding engineers to **35-person team** across multiple products, developing senior engineers into lead roles, hiring engineering managers, and mentoring director of engineering who became head of engineering.
 - Architected real-time infrastructure supporting **1M+ QPS** with <10ms latency requirements, negotiating **90% cost reduction** in network egress and enabling global bare metal deployment.
 - Pioneered **industry-first placement-level optimization** using viewability data, leading technical solutioning and development with ShareThrough and Index Exchange as launch partners.
 - Built self-service measurement platform with Temporal for event-based orchestration and ClickHouse for sub-second reporting.
 - Measured over **1 trillion ad impressions** across 100+ enterprise clients, featuring native integrations with Google, Trade Desk, Amazon, and Meta.
 - Launched agentic advertising platform using custom LLM-powered brand safety system with real-time infrastructure enabling content-to-classification and live campaign activation within **10 seconds**.
- **Waybridge (Commodities Trading Platform)** Oct 2019 – Dec 2021
Founding Engineer/Engineering Manager New York, NY / Remote
 - Founding engineer on 3-person team that built Waybridge's commodities trading platform from ground up, determining product-market fit through rapid iteration with early clients.
 - Led critical technical migrations including REST to GraphQL conversion and built trade amendment system enabling real-time modifications to booked trades.
 - **Managed critical SAP integration with largest client** through daily stakeholder engagement and 24/7 system monitoring, ensuring seamless production rollout while building reusable ERP adapter framework.
 - Scaled from IC to engineering manager leading 4-engineer team while maintaining technical contributions, improving API performance by **20x** on critical GraphQL queries.
- **AppNexus (Advertising Technology, acquired by AT&T)** Sept 2016 – Oct 2019
Senior Software Engineer, Team Lead New York, NY
 - Took ownership within months of the core pricing components in AppNexus's low-latency, distributed ad-serving platform (serving **billions of daily transactions**).
 - Rapidly promoted to tech lead for a **7-engineer cross-functional team** building exchange-traded media products.
 - Led company-wide transparency initiatives as both tech lead and product manager; acted as primary technical contact for Amino Payments and other blockchain partners. Delivered multiple external talks, including *Is Blockchain Ready for AdTech?* [Talk].
 - Designed and launched Transaction Resolver, a full replacement for AppNexus's streaming pipeline determining which ad auctions transacted (**1.5M+ messages, 200K+ transactions, 0.5GB/sec throughput**). Presented the architectural design at DeveloperWeek NYC 2018 [Slides].
 - Transitioned into engineering management, leading a forecasting team and driving architectural cost reductions by deprecating legacy systems.

EDUCATION

- **Princeton University** Sept 2012 – May 2016
B.S.E., Electrical Engineering, Magna Cum Laude Princeton, NJ
 - GPA 3.88; inducted into Phi Beta Kappa, Tau Beta Pi, and Sigma Xi honor societies.
 - Awarded the **Charles Ira Young Memorial Medal** for top research in Electrical Engineering.
 - Senior thesis published at PETS 2018: *Cracking ShadowCrypt* [Paper], [Talk].