

Yan Qi

Senior Engineering Leader · Data Platform & Infrastructure Architecture · Distributed Systems

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Executive Summary

Senior Engineering Leader with **15+ years** building large-scale data platforms and distributed infrastructure at Apple, Turn Inc., and Teradata, including **7 years leading multi-site engineering teams** at Apple. Deep expertise in business-critical content and event data platforms, real-time streaming architectures, distributed NoSQL storage, and production Generative AI integration.

Track record of global live-streaming launches, org-wide infrastructure cost reclamation, and building high-velocity engineering teams across multiple sites. Ph.D. in Computer Science, specializing in Database Systems and Query Optimization.

Professional Experience

Apple Inc. · Cupertino, CA

Senior Engineering Manager · 2021 - Present

Data Platform & Infrastructure — Apple TV+ & Sports

Lead the engineering team responsible for the core content catalog metadata platform, live event data pipelines, and real-time analytics infrastructure powering Apple TV+, Apple Sports, and partner streaming ecosystems. Team spanned Cupertino and Seattle through 2026.

Engineering Leadership & Team Development

- **Org & Ownership:** Lead a team of up to 9 engineers plus contractors; own platform SLAs, on-call rotation, and incident accountability across a portfolio of business-critical production datasets.
- **Talent Growth:** Recruited, onboarded, and mentored engineers across two sites; sponsored six engineers through promotion (two to staff, four to senior); grew an engineer into a technical-leadership role owning a major platform upgrade; ran a structured performance development plan to measurable improvement.
- **Engineering Culture, Measured:** Instituted review and quality standards sustaining 100% code-review compliance, 93%+ test coverage, and zero production escapes over rolling 30-day windows.
- **Operating Model:** Own the team's technical roadmap and quarterly planning cycle; established the weekly operating rhythm (standup, backlog grooming, release gating, technical deep-dives) and async-first written practices that cut recurring sync load while improving status visibility; built a self-service documentation and dependency-graph portal that cut ad-hoc stakeholder support load.
- **Cross-Org Influence:** Led a privacy-preserving analytics initiative spanning Privacy, Commerce, BI, Instrumentation, and QA teams through to approved production launch; sustained a multi-year partnership with the primary downstream consumer org on shared schema design.

Platform Architecture & Cross-Org Impact

- **Business-Critical Global Sports Infrastructure (Formula 1, MLS, MLB):**
 - Directed the end-to-end data platform build for the organization's largest and most complex global sports launch (F1 on Apple TV) — multi-canonical metadata, concurrent multi-view streams, and novel content-navigation features, delivered in a single quarter.
 - Supported the debut race weekend with **zero data pipeline outages** and all SLAs met.
 - Led delivery of real-time ingestion pipelines for Major League Soccer and Friday Night Baseball, bringing live event telemetry into near-real-time dashboards.
- **Unified Cross-Org Data Service Layer:**
 - Delivered an automated live-sports metadata service adopted as the shared content/data layer by multiple partner engineering teams, replacing per-team bespoke ingestion with a single governed source.
- **Next-Gen Aggregation Platform:**
 - Led the design of a query-time aggregation platform built on HyperLogLog probabilistic sketches, replacing rigid pre-computed OLAP cubes with on-the-fly computation.
 - Achieved an **order-of-magnitude reduction in stored data volume, >90% query runtime reduction, and >90% compute cost savings** across core datasets.
- **Enterprise Lakehouse Modernization & Cost Governance:**
 - Led a multi-quarter legacy batch pipeline deprecation and migration to a modern lakehouse platform across 5 core domain datasets, reclaiming **thousands of compute core-hours and terabyte-scale cluster storage** while eliminating years of accumulated pipeline tech debt.
 - Established cost attribution and chargeback modeling across shared data infrastructure consumed by multiple service teams, plus automated capacity planning that cut over-provisioning.

- **First Production Generative AI Integration:**

- Led the team that delivered the organization's first production LLM-embeddings integration: semantic title matching that reconciles external partner reporting data against internal catalog records.
 - Raised automated match accuracy from a **~60% baseline to 94%** and cut report generation from 1-2 hours to under 10 minutes.
- **Cloud-Native Resilience:** Directed containerization and Kubernetes migration of mission-critical services with automated autoscaling and right-sizing, enabling zero-downtime deployments.

Engineering Manager · 2019 - 2021

Content Analytics & Media Data Platform — Apple TV+ & Fitness+

Led engineering teams delivering analytics infrastructure, real-time dashboards, and data pipelines for the global launch of Apple TV+ and Apple Fitness+.

- **Launch Data Infrastructure for Apple TV+:**

- Led a new content-analytics platform from inception to production, enabling cross-functional executive visibility into content performance.
- Delivered the organization's first Near-Real-Time streaming analytics engine on Spark and Kafka, with sub-minute metric freshness for live content dashboards.

- **Apple Fitness+ & Partner Ingestion:**

- Delivered end-to-end data pipelines for Fitness+ catalog ingestion and partner reporting.
- Sustained launch-window SLAs during major global product launches while expanding the team through targeted, diverse hiring.

Software Engineer · 2016 - 2019

Media Products Data Platform (App Store, Music, TV, Podcasts, Books)

- Built and operated petabyte-scale distributed storage and search infrastructure (Apache Cassandra, HBase, Solr/Lucene) serving content metadata and full-text catalog discovery to global client applications; contributed to migrating legacy batch infrastructure to Apache Spark and cloud-native architectures.

Turn Inc. (Acquired by Amobee / Singtel) · Redwood City, CA

Architect, Scalable Data Platform · 2011 - 2016

Scalable Data Platforms & AdTech Infrastructure

- Architected **petabyte-scale** data lakes and ultra-low-latency stream processing for high-volume RTB traffic, plus distributed NoSQL and columnar analytical stores with multi-datacenter HA replication supporting continuous global ad serving and real-time attribution analytics.

Teradata Corporation · San Diego, CA

Software Engineer, Advanced Development · 2009 - 2011

Advanced Database Engine & Query Optimization

Researched and implemented core engine features in Teradata's flagship massively parallel processing (MPP) data warehouse: next-generation columnar storage and cost-based distributed query optimization at multi-terabyte scale.

Education

Ph.D. in Computer Science · Arizona State University, Tempe, AZ · 2004 - 2009

Focus: Cost-based query optimization in MPP databases, columnar indexing, stream processing.

Technical Skills

- **Platform & Big Data:** Apache Spark, Apache Flink, Apache Kafka, Apache Iceberg, Snowflake, Delta Lake, Trino/Presto, HyperLogLog aggregation
- **Distributed Storage & NoSQL:** Apache Cassandra, HBase, Solr / Lucene, PostgreSQL, columnar MPP engines
- **Cloud & Infrastructure:** Kubernetes, Docker, CI/CD, Grafana, multi-region deployments, capacity planning
- **AI / ML & LLM Engineering:** LLM embeddings & semantic matching, RAG, agentic AI systems, Vision-Language Models, vector databases
- **Programming Languages:** Java, Scala, Python, SQL, C++, Swift, TypeScript
- **Leadership & Governance:** Multi-site team leadership, technical roadmap & quarterly planning, hiring & performance management, data governance, cost attribution, incident management, privacy compliance

Certifications

Agentic AI & AI Agents for Leaders (Vanderbilt, 2025) · Generative AI Leadership & Strategy (Vanderbilt, 2024) · Deep Learning (DeepLearning.AI, 2023)