

PRUTHVI PRODDUTURI

Engineering Lead | Distributed Systems | Query Engines | Platform Engineering
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PROFESSIONAL SUMMARY

Engineering lead and senior software engineer with 13+ years building distributed systems, query engines, and zero-to-one platforms. Lead engineer behind Microsoft's IDEAS journey onto Fabric — architecture published on Microsoft Learn as the enterprise reference. Work recognized up to CEO Satya Nadella. Equally effective designing service architecture and communicating technical direction to executive audiences.

CORE SKILLS

Leadership: Zero-to-one builds, executive communication, mentoring engineers, cross-geo leadership, navigating ambiguity, open source
Systems & Architecture: Distributed systems, MPP query engines, columnar storage, vectorized execution, service architecture, API design, async job systems, IoT orchestration

Data Engineering: Lakehouse design, semantic models, telemetry pipelines, Medallion architecture, data governance, exfiltration prevention, EUDB compliance

Query Engines: Fabric SQL, Presto/Trino, StarRocks, ClickHouse, Apache Kylin, query optimization

Languages: C#, .NET, Python, TypeScript, JavaScript, SQL, T-SQL, KQL, SCOPE

Platform & Security: Azure, FastAPI, React, IoT Hub, managed identity, VNet, CI/CD automation, zero-trust architecture, Cosmos DB

PROFESSIONAL EXPERIENCE

Microsoft | Redmond, WA

Senior Software Engineer | Nov 2022 – Present

Distributed Systems & Query Engine Analysis

- Drove a deep performance analysis of Fabric SQL against Trino (MPP, columnar) — query optimization, predicate pushdown, partition pruning, materialization strategies. After my sign-off, executive reports migrated onto Fabric SQL. Shaped the engine roadmap. Reusable benchmarks adopted by multiple platform-engineering teams. Recognized up to the Azure Data President and CEO Satya Nadella.

Engineering Lead — IDEAS–Fabric Partnership

- The lead engineer behind Microsoft's IDEAS journey onto Fabric — from the initial Trino-vs-Fabric evaluation that catalyzed the partnership to the semantic model strategy powering analytics at scale across 600+ teams.
- Designed and implemented the Direct Lake semantic model approach, Fabric development lifecycle for compliance and reliability (Git-integrated CI/CD, semantic workspace isolation, production promotion via Azure DevOps). Architecture published on Microsoft Learn as the reference for Fabric adoption at enterprise scale.
- Automated production promotion (~80% manual time), drove deployment regressions to zero through breaking-change and datatype policies.
- Root-caused a platform-wide Power BI rendering issue and halved global report first-render time (~15s → ~7s) — impacting every report consumer across the globe.

Data Security & Compliance at Platform Scale

- Surfaced a critical data exfiltration vulnerability in Microsoft Fabric, authored the end-to-end remediation — access-boundary design, asset-naming standards, governance policies — and presented the required API changes and requirements to the platform team. Design adopted as a native Fabric capability.
- Laid foundational standards for EUDB-compliant data handling, defining how data residency and sovereignty controls are enforced at platform scale.

Competitive Intelligence Platform — M365 Copilot Analytics

- Architected and built the end-to-end competitive-intelligence system powering the M365 Copilot analytics plane — ingestion services, governed data models, and the executive analytics layer spanning AI compete, Security compete, and Product-level compete. Sub-5s query latency, reviewed daily by executives. 100% metric parity across executive scorecards.
- Pipelines processing billions of rows/month across 10+ GenAI products (Copilot, ChatGPT, Gemini, Claude, Perplexity). Reduced SLA breaches by 25% through pipeline reliability engineering and data governance hardening.

Platform Engineering — IoT Fleet Orchestration (2026)

- Designed and built a real-time orchestration platform from zero for autonomous datacenter robots — 26-endpoint REST API (Python/FastAPI), React front-end, per-device job queue, mission lifecycle engine via IoT Hub direct methods.

- Real-time environmental monitoring over 18 PB/month of datacenter telemetry (~630B rows/day) across global sites. Defined cross-team API contracts between cloud platform and robotics firmware, replacing CLI-as-API with proper service boundaries.
- Engineered parallel fleet discovery (asyncio + thread pooling), $O(n) \rightarrow$ single parallel call, scaling to 1,000+ devices. Hardened to zero-key operation — managed identity, private endpoints, VNet isolation.

Microsoft | Redmond, WA

Software Engineer II | Jan 2019 – Nov 2022

- Built distributed reporting systems and data services for Microsoft News. Designed OLAP solutions using Apache Kylin, Mondrian, and ClickHouse for high-volume analytics.
- Partnered with COSINE to build a unified hot-data platform on AKS and Presto. Accelerated data availability by 7+ hours/day. Maintained CI/CD pipelines for deployment consistency.

HCL America | Redmond, WA

Technical Lead | 2017 – 2019

- Reduced ETL processing time by 95% using C#, Avocado, and SCOPE automation. Led offshore telemetry and analytics teams (India) supporting MSN.

Mindtree | India

Senior Software Engineer | 2013 – 2016

- Delivered BI analytics and telemetry systems for Microsoft Android apps. Built SCOPE-based ETL pipelines reducing reporting time by 85%. Migrated Power Pivot to Power BI, reducing analysis time by 80%.
- Part of the Windows Azure Global Operations team, building and maintaining live-site dashboards for operational visibility across Azure services.

Kent State University | Kent, OH

Student Tech Lead / Web Developer | 2016 – 2017

- Redesigned and re-architected the university college portal — restructured how event data was collected, displayed, and managed across departments. Built during M.S. in Digital Sciences.

OPEN SOURCE & PUBLICATIONS

- Trino C# .NET Client (trinodb/trino-csharp-client) — Use-case design and integration engineering. Acknowledged at Trino Summit 2024.
- IDEAS journey to a modern data platform with Fabric — Published on Microsoft Learn. 6 technical articles on Medium (medium.com/@pruthvi.prodduturi).

EDUCATION

Kent State University | M.S., Digital Sciences (Computer & Information Sciences) | 2016 – 2017

Jawaharlal Nehru Technological University | B.Tech., Electronics & Communication Engineering