

Lalit Maganti

SENIOR STAFF SOFTWARE ENGINEER

🏠 lalitm.com | 📧 LalitMaganti | 💻 lalitmaganti | 🎓 Lalit Maganti

Summary

Senior Staff Software Engineer with over 8 years of experience at Google, specializing in developer tooling and large-scale system performance analysis. I co-architected, and led the development of **Perfetto**, a suite of tools that has revolutionized performance diagnostics for **Android** and **Chrome**.

My work focuses on driving foundational technical strategy and delivering measurable improvements in product latency, efficiency, and quality. I am passionate about open-source, leading to Perfetto's adoption by projects like Mesa and QEMU and industry leaders like Meta and Microsoft.

Work Experience

Senior Staff Software Engineer

Google

APR. 2025 – PRESENT

London, UK

- Directs the technical strategy for the performance ecosystem, shifting the focus from reactive debugging to proactive, quality-driven delivery across **Android** and **Chrome**.
- Orchestrates high-level collaborations with leadership in **Search** and **Google Play Services**, driving systemic improvements that reduced search latency by **10ms (P50)** and resolved over 50 critical memory regressions.
- Establishes industry-wide standards, securing adoption by external partners including **Samsung, Meta, and Microsoft**.
- Acts as the Lead Architect for the Perfetto ecosystem, setting the bar for code quality, architectural consistency, and documentation across the team and open-source contributors.

Staff Software Engineer

Google

OCT. 2022 – MAR. 2025

London, UK

- Conceived, architected and built **Bigtrace**, a distributed analysis engine that moved trace processing from local machines to the cloud, increasing analysis throughput by **1000x**, allowing processing of O(billion) traces per month.
- Engineered a privacy-compliant field tracing stack from scratch, overcoming significant privacy and legal obstacles.
- Empowered domain-specific teams (including **Auto, TV, and Wear**) to build autonomous telemetry stacks by abstracting complex infrastructure into a flexible platform.
- Received a company-wide award for enabling optimizations that improved Android system contention metrics by over **98%** (703ms → 8ms).

Senior Software Engineer

Google

OCT. 2020 – SEP. 2022

London, UK

- Architected **BatchTraceProcessor**, an single-machine interactive analysis library that allowed teams to move from manual trace inspection to automated, aggregate data analysis.
- Scaled the trace processor to support 49 different internal projects throughout Google.

Software Engineer

Google

SEP. 2017 – OCT. 2020

London, UK

- As a **founding engineer**, architected the **Trace Processor**, a C++ library acting as an organization-standard SQL interface for performance analysis, replacing legacy and fragmented tools with a unified and custom column-oriented query engine.
- Delivered the initial integration into developer surfaces including **Perfetto UI, Android Studio** and **Android GPU Inspector**.

Software Engineering Intern

Google

SUMMER 2016 & SUMMER 2015

Mountain View, CA & London, UK

- Interned in the Android Location Research Team in Mountain View and Chrome Open Web Platform team in London.

Education

MEng in Joint Mathematics and Computing

Imperial College London

2013 – 2017

London, UK

- Graduated with **First Class Honours**, focusing on software engineering, logic, formal verification and statistics.
- Awarded the **Governor's Prize** as the **top graduating student** in the cohort and **Donald Davies Memorial Prize** for the best final-year project.
- Final year project resulted in several research papers which have been collectively cited over **500 times**.

Talks

Perfetto: The Swiss Army Knife of Linux Client/Embedded Tracing

Tracing Summit 2025

SEP. 2025

Montréal, Canada

- Demonstrated how Linux kernel and embedded developers can utilize Perfetto for root-causing performance issues, showcasing advanced features like scheduler analysis and userspace instrumentation on non-Android systems.

Analysing Perfetto Android traces at every scale

OCT. 2022

Tracing Summit 2022

London

- Presented a talk on new techniques and tools for analyzing large volumes of Android performance traces collected with Perfetto.

Open-Source Projects

HoloIRC & Relay

2013 – 2015

- Built and maintained a fully-featured IRC client for Android (HoloIRC) and its underlying Java library (Relay).

Android Device Bring-up & Kernel Development

Sony

2014 – 2015

- Collaborated with Sony to develop open-source kernels and perform device bring-up for various Android devices.

Android Custom ROMs

CyanogenMod & OmniROM

2012 – 2015

- Contributed to major Android custom ROM projects, gaining significant insight into the inner workings of the Android platform.