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# ABHISHEK SUNDARARAJAN

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San Francisco Bay Area

## Education

University of Southern  
California, Los Angeles, CA —  
MS, EE, 2011-2013

## Skills

**Languages:** Python, SQL, C++,  
C

**Platforms:** Docker, Kubeflow,  
Airflow

**Data Stores:** PostgreSQL, S3  
**Other:** PySpark, Hadoop, Hive,  
AWS Lambdas; Presto;  
ElasticSearch; gRPC; PyTorch;  
ROS; Tableau; Git; REST APIs;  
ETL;

## Professional Summary

Senior technical leader with deep expertise in scalable ML infrastructure and data systems engineering. Currently working as a Staff ML Platform Engineer in Apple's AIML organization, with experience in data engineering, benchmarking, and infrastructure across multiple high-impact projects.

## Experience

### Staff ML Platform Engineer, Apple (AIML); Sunnyvale, CA — March 2024 - Present

- **Architect** of the data pipeline for building video datasets for multimodal large language models, on a scale of 50 million videos. Drove the project, leading a group of 4 engineers, delivering a dataset in 7 weeks, and a pipeline that is operationally simple for ML engineers to run for building fine tuned datasets on top of it.
- **Technical Leader** for UI navigation agent evaluation engine, designing a scalable benchmark framework to create unified performance baselines, running online evaluations of different agents on device. Generated specialized datasets for foundation model training pipelines. Influenced product decisions with quantifiable quality signals from agent interactions. Generated specialized datasets that contributed to shipped Apple foundation models.

### Sense ML Platform Lead Engineer, Apple (SPG); Sunnyvale, CA — Aug 2022-Feb 2024

- **Proposed, designed and lead** an effort to build an abstraction layer to represent and access data and datasets across the project. Significantly reduced friction between different data workflows, and reduced time to access production data from weeks to few days. This data management layer serves as both a feature store and a data catalogue. Drove infra adoption org-wide across 4+ teams / 50+ engineers;
- **Overhauled annotation infrastructure** from first principles. With a focus on high throughput, reasonable latency and bring-your-own-data workflows. Operating at different abstractions: compute, orchestration, storage and platform spec and guarantees. Coordinated planning across multiple teams, aligning users with different goals. Users can specify their own annotation spec, send payloads to vendors and access annotations once done, with ETL abstracted away.
- Provided technical leadership on various cross functional projects related to compute workflows, orchestration and caching. Drove alignment on goals and outcomes.
- **Managed growing the engineering team.** Mentoring new and senior engineering, hiring.

### Senior Software Engineer, Data, Apple (SPG); Sunnyvale, CA — Aug 2019-Aug 2022

- **Built the dataset generation pipeline.** Lead for the ML data pipeline, managing the lifecycle of the annotations and datasets. Automated the workflow, and scaled it up so that it can handle **10x** the volume of data, while being **14x** faster.
- **Lead for annotation data quality**, responsible for building algorithms, tools and pipelines to evaluate annotators and annotations. Built the tooling from scratch, handles **~20k** annotation "tasks" each week. Quality metrics led to reduction in money spent on each annotation task by **50%**.

### Research Engineer, Apple (SPG); Sunnyvale, CA — June 2015-Aug 2019

- **Built prototypes** to aid and accelerate annotations of lidar point cloud data, with speed ups ranging from **5x to 20x** compared to human-only annotations.
  - Developed algorithms for real time eye tracking and gaze estimation using machine vision cameras, illuminators and Arduinos. Designed APIs to control high-speed cameras. Built CVML libraries and data model for object tracking.
  - Evaluating external vendors of high technology for potential acquisitions and contracts.
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**Software Engineer, Metaio; San Francisco, CA — Feb 2014-May 2015**

- Optimized image processing and computer vision algorithms for ARM processors using the NEON SIMD instruction set.
- Created augmented reality applications for Android, iOS, Windows and wearable devices like Epson and ODG using Metaio's SDK.

**Patents and Patent Applications:**

- Matheen M. Siddiqui, Soumitry Jagadev Ray, Abhishek Sundararajan, Rishabh Bardia, Zhaoyi Wei, Chang Yuan; "Eye And Head Tracking," U.S. Patent Application No. 15713341, March **2018**.

- Matheen M. Siddiqui, Soumitry Jagadev Ray, Abhishek Sundararajan, Rishabh Bardia, Zhaoyi Wei, Chang Yuan; "Eye And Head Tracking," U.S. Patent Application No. 10496163, December **2019**.