# Sahil Gandhi

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## Education

**University of California, Los Angeles**

M.S. Computer Science – (*Specialization: Distributed and Big Data Systems*) **Apr 2019 - Mar 2020**

B.S. Computer Science and Electrical Engineering – (*Summa Cum Laude*) **Sep 2015 - Mar 2019**

**Activities:** IEEE, Eta Kappa Nu (HKN), Tau Beta Pi (TBP), Upsilon Pi Epsilon (UPE), Supermileage Vehicle - EV

## Skills

**Programming Languages:** Java, Golang, Python, Bash, JavaScript

**Frameworks and Technologies:** Kubernetes, Docker, Protobuf, Vert.x, Helm, Vault, Terraform, AWS, GCP, AZURE, SQL, PostgreSQL, OpenTelemetry, OpenCensus, DataDog, NewRelic, UNIX, React, RocksDB, Git, Mercurial

## Work Experience

**Confluent**

*Senior Software Engineer II - Compute Platform and Capacity* **June 2023 - Present**

- Promoted Vertical Pod Autoscaler (VPA) adoption, slashing Kubernetes cluster spend by $10k+/mo
- Automated node type migrations for Kafka, yielding savings of $2m+/yr and improving end-to-end latency by 20%
- Technical lead for a regional deployment framework to support the next generation of the regional Confluent Kora Engine
  - Designed various functionalities including: cross-k8s deployments, scaling, availability, networking, and S2S auth(n/z)
  - Mentored and grew sub-team of 5 engineers to deliver the first few versions of the framework

*Senior Software Engineer - Control Plane Fleet Management* **June 2022 - June 2023**

*Software Engineer II - Control Plane Fleet Management* **June 2021 - June 2022**

*Software Engineer - Control Plane Fleet Management* **June 2020 - June 2021**

- Founding engineer on the Fleet Management team that designs scalable solutions for day 1+ operations on clusters
- Spearheaded the design of a new Java-based workflow engine, incorporating the Vert.x framework and Datadog monitor APIs; resulting in a 95% reduction in incident rate and reduced the roll time for the entire fleet from several months to 2 days
- Generalized the workflow engine via a well-defined GRPC contract for seamless compatibility with any Confluent cluster and any operations, empowering all cloud teams to leverage maximum parallelism and continuous monitoring
- Streamlined microservice deployment through the design and development of a new cloud-agnostic Golang-based Kubernetes deployment engine; eliminating manual Helm deployments, and scaling from 30 to 10000+ deployments/day
- Developed a unified view of all cluster information through a Golang and ReactJS-based microservice + UI; eliminating manual database commands and reducing manual information stitching from multiple sources
- Mentored 5 new employees and interviewed numerous candidates to foster a positive and inclusive work environment

**Microsoft**, *Software Engineering Intern - Microsoft Research (BuildXL)* **Jun 2019 - Sep 2019**

- Revamped logging infrastructure in distributed build tool to use ProtoBuf schemas for forward/backward compatibility
- Implemented a caching feature for important log data in RocksDB to speed up log file analyzers between 5x and 200x, allowing software engineers in Windows and Office to gain insights to optimize their distributed builds further

**UCLA ScAi Lab**, *Undergraduate/Graduate Researcher* **Jan 2018 - Jun 2019**

- Researched under Dr. Zaniolo and Ariyam Das on real-time streaming DBs, NLP Datalog parsers, and graph visualizations
- Built an n-ary And-Or tree parser for faster querying, an NLP tool to parse Datalog and Python profilers for HAT trees

**Facebook**, *Software Engineering Intern - Release To Production Team* **Jun 2018 - Sep 2018**

- Merged functionalities of several testing tools to enable automated re-testing and move to the new CI/CT pipeline
- Optimized the DB design to speed up queries and the validation portal UI by more than 50%, and automated the creation and updates of test results: saving the organization $300k/yr a year in man-hours

## Patents and Publications

**Patent:** Managing Applications Spread across Kubernetes Clusters and Boundaries **18/958,570**
**Patent:** Ensuring Time Frame for Cloud Software Rollouts **19/056,415**
**Patent:** Automated upgrade in distributed computing environments **11983524**
**Publication:** Learn Smart with Less: Building Better Online Decision Trees **IJCAI 2019**
**Publication:** ASTRO: A Datalog System for Advanced Stream Reasoning **CIKM 2018**

## Projects and Open Source

**Trivia Bot:** Created an automated bot to tackle online trivia games like HQ Trivia, BTQ, and more (Python, Flask, JavaScript)
**Micromouse:** Designed the PCB and programmed the MCU for an autonomous maze solving robot - (C, C++, Autodesk Eagle)
**Free Throw Classifier:** Created a classifier for basketball shots using 3 Hexiwears mounted on a user's arm - (Python, C++)
**C.A.R.M.:** Created a Chrome extension that lets users instantly message anyone else on the same website - (JavaScript, MQTT)