Sachin Iyer

sachinjiyer@gmail.com
https://sachiniyer.com
https://github.com/sachiniyer

Education

New York University — Sep 2020 - May 2023
Bachelors of Science in Computer Science — *Brooklyn, NY*

Basis Independent Silicon Valley — Sept 2017 - May 2020
High School Diploma — *San Jose, CA*

Experience

Amazon — Software Development Engineer
Incoming — *Seattle, WA*

Amazon — Software Development Engineering Intern
May 2022 – August 2022 — *Seattle, WA*

Data Aggregation Service: Created a full stack service to visualize last mile delivery data. Created a Typescript React frontend with Polaris styling that calls an AWS backend implemented with Java Lambda Functions, API Gateway, S3, and Internal Amazon Services. Used S3 Select and Spark to filter through about 1TB per query.

Deployment/Observability Pipeline: The service is built with the AWS Typescript CDK. It is validated with unit and integration testing before being deployed through CodeDeploy and monitored with CloudWatch alarms and SNS.

NYU High Speed Research Network (HSRN) — Academic Researcher
February 2021 – May 2023 — *Brooklyn, NY*

Parallel File System: Deployed an NSF funded 6PB storage PFS (SeaweedFS) for usage internally and externally to the HSRN. Automated Deployment with Ansible Playbooks and Rust CLI. Benchmarked with Bonie++ and IOR.

Clients: Implemented API of internal broker service for Bash, and did core development on Python, C++, and JS

Audio Conferencing: Created an audio service (Portaudio) in C++ that interfaces with internal broker service.

CI/CD: Developed documentation, linting, testing, deployment (DinD with Kaniko) pipelines for the project in Gitlab

Mentorship: Leader of the student research arm. Managed and onboarded over 110 students over 4 semesters.

Hewlett Packard Enterprise (Aruba Networks) — Cloud Intern
June 2019 – August 2019 — *Santa Clara, CA*

Estimating Bandwidth: Estimated bandwidth using Auto ARIMA/Prophet and other time series algorithms.

Sparkup — Software Development Engineering Intern
September 2022 – December 2022 — *Brooklyn, NY*

UX Development: Implemented a new feature in React Native App to link names and phone numbers in transactions

Dark Forest — Graphics Intern
December 2021 – February 2022 — *San Jose, CA*

Shader Development: Created a typescript plugin that allows for custom WebGL shaders in the Dark Forest game.

Projects

Ansible Batch Runner: Used Rust and Clap to create a cli for batch running and managing Ansible Playbooks

Personal Blog: Put up a custom themed hugo blog git synced from through custom docker container builds/deploys site

Book Recommendation Engine: Wrote a recommendation engine to group books based on wikipedia page similarity.

Circular Buffer: Wrote a header only circular buffer library in an STL style (e.g. templating, custom iterators).

K3S Cluster: Created a portable resilient fault-tolerant k3s cluster that networks through a wireguard mesh (headscale)

Control Display: Created a mass controllable (over 50 simultaneous people) LED matrix. Host built with arduino metro and platformio, USB Serial Buses for communication, and React, Docker, and Material UI for site

Corelink Audio Conferencing: Created an audio service (Portaudio) in C++ that interfaces with Corelink.

CTF: Built CTF with Docker Compose, Dnsmasq, Postgres, Node MQTT server, Rust/Tide HTTP server and XtermJS

Dark Forest Shader Development: Created a typescript plugin that allows for custom WebGL shaders in the Dark Forest game.

Delivery Service: Created a web crawling service to notify available grocery delivery slots for Whole Foods, Costco, or Safeway. Used AWS SNS, ECS, and Lambda functions. Created headless Chrome docker containers running Selenium.

Electronic Trombone: Made a trombone midi controller using Arduino with capacitive sensing and pid controllers.

Foot Pedal: Built a portable guitar pedal using LiPo batteries, teensy 4.0 (and audio shield), LCD displays, and custom C++ audio effects

IP Monitor: Used the QT Framework and built a KDE widget to monitor your public and private IP Addresses.

Link Checker: Created a Rust CLI tool with Clap to automate link verification from args, stdin, or files.

Parallel File System: Deployed an NSF funded 6PB storage PFS (SeaweedFS) for usage internally and externally to the NYU HSRN. Benchmarked with Bonie++ and IOR.

Git OpenResty: Created a container that utilized Lua JIT with OpenResty to sync git repos as a git-sync alternative

Reactive Sign: Used AWS IOT, Lambda, and API Gateway to build a interactive LED sign through serverless infra

Apps Status: Built an API with Rust, Tokio Async, Axum, and Reqwest that proxies status for my self-hosted apps

Synesthesia Visualizer: Create a visualizer that mimics the experience of Auditory Visual Synthesis with librosa and yin. Utilizes AWS infrastructure (autoscaling ec2s in a k8s cluster) for compute and WebVR for visuals

Tweet Toxicity: Used DistilBERT, Pytorch, HuggingFace Transformers, Streamlit and AdamW to classify toxicity type

Personal Website: Self-deployed a BabylonJS website with kubernetes k3s and full CI/CD using Git OpenResty

Wikipedia Editor Analysis: Used Spark, LDA, Cohere to find how much Wikipedia editors stray from their domain/topic expertise from Wikipedia dumps. Analyzed 6TB of data using NYU HPC/ SLURM and presented findings

Programming Skills

Langs: Typescript, Javascript, Node, C++, C, Rust, Java, Python, (e)Lisp, Bash/Zsh, MDown, JSON, YAML, LaTeX

Tech: AWS, Linux, Emacs, QT, Docker, k8s/k3s Rancher, Nginx, Traefik, ReactJS, Tailscale, MongoDB, Postgres, ...

Certifications

AWS Solutions Architect	*September 2021*
AWS Cloud Practitioner	*August 2021*
Stanford Machine Learning by Andrew Ng	*July 2020*
AWS Fundamentals Specialization	*June 2020*