Sachin Iyer

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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

AWS Bedrock *12/2023 — Present* *Seattle, WA* Software Development Engineer

Bedrock: Creating Generative AI infrastructure for AWS Bedrock like batch inference and provisioned throughput

Amazon Last Mile *05/2022 — 08/2022* *Seattle, WA* Software Development Engineering Intern

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.

NYU High Speed Research Network (HSRN) *02/2021 — 05/2023* *Brooklyn, NY* Academic Researcher

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) *06/2019 — 08/2019* *Santa Clara, CA* Cloud Intern

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

Sparkup *09/2022 — 12/2022* *Brooklyn, NY* Software Development Engineering Intern

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

Dark Forest *12/2021 — 02/2022* *San Jose, CA* Graphics Intern

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)

College Rank: Extensible meta-ranking from conference proceedings/best papers, placement rank, paper age, interests

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.

Diff Challenge: Became the 3rd finisher of the diff challenge by ggerganov (ggml, llama.cpp, whisper.cpp, kbd-audio)

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, and custom effects

Git-sync Webhooks: Fork of git-sync with webhooks instead of polling. Supports IP whitelists, signatures, and secrets

IGJ Title Analysis: Analyzed the titles of the Indian Geographical Journal for importance using the tf-idf algorithm.

Invoice Categorization: Automatically sorts invoices into categories utilizing Bedrock Batch, Flask, React, Tailwind

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.
Mastodon Status: Created a Rust Lambda function with a custom Megalodon-rs to push outage status to Mastodon
mnist-wasm: A custom, resource efficient, rust/wasm nn with jit spawned web-workers, yew, axum, wasm-bindgen
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
Resow: Created a better Craigslist free section with ReactJS, MUI, Open Layers, Express, MongoDB, S3, Mocha, Jest
Sembox: A drive with semantic searching over doc types with blip, xsum, whisper, bert, cosine similarity, mui/nextjs
Apps Status: Built an API with Rust, Tokio Async, Axum, and Reqwest that proxies status for my self-hosted apps
Synesthesia Visualizer: Auditory Visual Synthesis Visualizer with librosa, yin, eks, flask, docker, blender, WebVR
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 Custom Git Sync
Wikipedia Editor: Used Spark, LDA, Cohere, NYU HPC/ SLURM for variance in editor topics with 6TB of dumps

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*