BHARAT KATHI

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SKILLS

Languages: C++, Dart, Golang, Java, NodeJS, Python, Swift

Technologies: AWS, Azure, Docker, Firebase, GCP, Git, Kafka, Kubernetes, Pandas, PostgreSQL, PyTorch, RabbitMQ, SingleStore, Snowflake

EDUCATION

University of California, Santa Barbara **September 2021 – June 2025**

B.S. Computer Engineering

- Relevant Coursework: Circuits and Systems, Computer Architecture, Computer Vision, Data Structures & Algorithms, Deep Learning, Distributed Systems, Embedded Systems, Machine Learning, Operating Systems

EXPERIENCE

SingleStore • Software Engineering Intern **June 2024 – September 2024**

- Worked on the Growth Engineering team to build demos around SingleStore's SPCS Native App (bringing the SingleStore HTAP engine into Snowflake's Snowpark Container Services)
- Created a demo showcasing the SPCS integration to enable real-time data analytics on Snowflake's data warehouse
- Mocked a ridesharing application that produced real-time rider/driver updates to a Kafka broker, ingesting the data into Snowflake + SingleStore in SPCS, and displayed analytics in a React dashboard, showcasing latency and query performance improvements
- Presented the demo to prospective customers as well as at SingleStore's annual conference (SingleStore NOW)

Axiamatic (Greylock-backed startup) • Software Engineering Intern **June 2023 – September 2023**

- Built out custom components using React and Typescript for Admin UI, an internal tool for engineers to manage and monitor the platform
- Added new services to the Admin Gateway (the backend powering Admin UI) using Python and FastAPI, and deployed on AWS Fargate
- Created a Service Registry Browser to visualize and provide easy access to information on the hundreds of services deployed on AWS, dependencies between services and on datastores were automatically generated nightly from AWS CDK config files
- Created an On-call Log to track on-call events for each engineer and each team, tag and search through previous actions taken, and send slack workspaces notifications to relevant engineers/teams when an on-call event is triggered

Gaucho Racing (UCSB Formula SAE) • Data Lead **September 2021 – Present**

- Led development of Mapache, a real-time telemetry system enabling data-driven engineering through edge-deployed machine learning and cloud analytics for our team's Formula-style electric racecar
- Deployed lightweight ML models on Jetson Orin Nano for real-time thermal prediction and anomaly detection on 200+ sensor signals streamed over CAN
- Designed a fault-tolerant system to cache telemetry locally, then batch-convert and upload to the cloud as Parquet files via a GPU-accelerated cuDF pipeline
- Built cloud infrastructure for data ingestion, time-series analysis, and long-term storage using MQTT, SingleStore, and AWS
- Developed a React + TypeScript dashboard and integrated a natural language interface for querying ML-derived insights and performance trends

Pacific Esports League • Software Engineering Intern **June 2022 – September 2022**

- Worked on the the PEL Portal, a web app built with Flutter allowing players to create teams, register for tournaments, and track their stats in the league
- Created a custom CMS for admins to manage tournaments, teams, and players
- Implemented a matchmaking system which automatically seeds teams, notifies players of upcoming matches, and allows them to submit match results
- Setup CI/CD pipelines using GitHub actions to automatically deploy backend Go microservices to Azure Container Apps

PROJECTS

StorkeCentral • 1,500+ Users **storkecentral.app**

- Created a platform for UCSB students to access important campus information, and scaled to over 1,000 monthly active users
- StorkeCentral provides easy access to dining hall menus, campus maps, bus schedules, and more
- Users can add their friends, share class schedule information, and receive notifications when friends are in class
- Flutter frontend, Go + PostgreSQL + Kubernetes backend

Sentinel **github.com/gaucho-racing/Sentinel**

- Created Sentinel, a central authentication service for Gaucho Racing (UCSB's Formula SAE team)
- Keeps track of an active member directory, interfacing with our Discord server to sync subteams and roles
- Implemented OAuth 2.0 and OpenID Connect protocols to allow internal tools to authenticate members, as well as serve as an identity provider for external tools
- Automated onboarding/offboarding processes for the team, including managing permissions for Google Drive, GitHub, and even SOLIDWORKS CAD Licenses.
- React + Typescript frontend, Go + SingleStore backend

Epic Shelter **github.com/gaucho-racing/EpicShelter**

- Created Epic Shelter, a high-performance, distributed data backup/migration system
- Supports PostgreSQL and MySQL wire compliant databases, as well as SingleStore and Snowflake
- Data is backed up from a source database table as a batch of parquet files, backed up to S3, then ingested into a target database table
- Orchestrator service allows distributing data movement across multiple worker nodes, and monitoring the status of the backup/migration
- cuDF is used to acclerate reading/writing parquet files on GPUs
- Parquet files from S3 are directly ingested into the target database when supported (SingleStore, Snowflake)
- React + Typescript frontend, Go orchestrator, Python backend (cuDF + Pandas)

Jiffy **github.com/gaucho-racing/Jiffy**

- Created Jiffy, a purchase request system for Gaucho Racing (UCSB's Formula SAE team)
- Members can submit purchase requests for parts needed the car, which go through a 2 step approval process with the subteam's lead and the treasurer
- Order statuses are automatically updated from vendors in the system, and notifications are sent to members as requests are processed including shipping updates
- The treasurer can view a summary of all purchase requests and approve them from a centralized dashboard
- Time-bound budgets for each subteam can be set by the treasurer, enabling better financial management of the team as well as more transparency into spending over time for all members
- React + Typescript frontend, Go + SingleStore backend

myDECA • 1st Place State, 3rd Place International DECA **github.com/bk1031/myDECA-web**

- Created a platform used by 7 schools across california, that improves communications among DECA chapters through built-in announcements, group chats, push notifications, as well as convenient access to resources including conference information, practice materials, and meeting details
- Flutter frontend, NodeJS + Cloud Functions + Firebase backend

CF Tracker • 1st Place, HealthHack II **github.com/bk1031/CF-Tracker**

- Created a mobile app that CF patients can use to track daily treatments including nebulizer usage, meal and enzyme intake, and sends push notifications to remind users if they miss a dose
- Also collects stool and other data (inputted by the user) to a database and runs a model (Tensorflow/Keras Dense Layer Neural Network) to determine if a person should take more or less enzymes
- Flutter frontend, Python + PostgreSQL + Tensorflow backend