

Saswata Mukherjee

SWE interested in Observability, Distributed Systems, and OSS

 github.com/saswatacode

 linkedin.com/in/saswatacode/

 saswatacode.tech

 KubeCon EU'24

 saswataminsta@yahoo.com

 London, UK

SKILLS

Languages

Golang, JavaScript, TypeScript, SQL

Databases

TSDBs, PostgreSQL, SQLite, Redis

Libraries/Frameworks

go-chi, Echo, Node.js, React.js, Next.js

Concepts

RESTful APIs, gRPC, Observability, Monitoring, SLOs, GraphQL







Tools

Git, GitHub, Docker, Prometheus, Thanos, Grafana, Observatorium, Kubernetes, OpenShift, Build Tools, CI/CD

EXPERIENCE

Red Hat, Software Engineer





Jan 2022 – present

- Engineering a distributed open-source observability SaaS called Observatorium , that allows ingesting, using, and storing observability signals on Kubernetes and makes it easier to correlate data.
- Working with components like Thanos and Prometheus, primarily building with Go. Involved in a 24/7 on-call rotation and responsible for incident management for a platform capable of ingesting a combined ~80M active series.
- Implemented several major features around recording & alerting rules, to make it possible for multiple tenants to configure and receive alerts in a GitOps fashion while accounting for tenant isolation.
- Architected and developed a critical new API path for remote OpenShift health monitoring, that modifies Prometheus remote-write requests and forwards to any compatible receive endpoint such as Thanos Receive.
- Joined after an internship, during which designed and architected a CLI which is now used as the de-facto way of interacting with Observatorium SaaS, obsctl , which acts as a proxy to allow tenants to access all their monitoring data in a single-pane-of-glass view.
- Joined as an Associate Software Engineer in July 2022 and promoted to Software Engineer in April 2023.
- Consistently mentoring students every quarter for open-source Thanos projects via the CNCF LFX Mentorship program .
- Currently an open-source maintainer for Thanos , (CNCF incubating project), Observatorium , and other libraries .

Google Summer of Code @ Cloud Native Computing Foundation (Thanos),


May 2021 – Aug 2021

Mentee

- Developed mdx , an open-source tool for smart automation of project documentation and website, written in Golang.
- Designed and introduced features around robust markdown formatting using GFM spec , doc transformation, and fast link checking with smart validators that take rate limits into account.
- This tool is now being used as a CI/CD automation tool for maintaining documentation in notable CNCF open-source projects such as Thanos  and Observatorium .
- Currently a maintainer for this project as well.

MayaData (now ChaosNative), Software Engineer Intern

Aug 2020 – May 2021

- Built UI components and screens and pioneered code refactors for data-intensive dashboards of LitmusChaos , an open-source Cloud-Native Chaos Engineering Toolkit, as well as Kubera, a single-click enterprise Kubernetes automation solution.
- Transitioned frontend codebases for detailed Chaos Engineering dashboards to use a custom in-house component library, Kubera-UI, using technologies like React.js, Material-UI, TypeScript & StoryBook.

PROJECTS

ConfigMap Operator, Go, Kubernetes client_go, Observability

- Created a Kubernetes Operator which allows updating ConfigMaps, based on some external URL or filepath that contains required data.
- Useful for high-velocity updates to the configurations without having to update ConfigMaps manually.
- Also exposes metrics, traces, and logs for cloud-native observability.

Quote Search Engine, Golang, Elasticsearch, Next.js, TypeScript

- Implemented a scraper job that indexes Goodreads quotes into Elasticsearch for robust text analysis using Golang.
- Built a CLI and a frontend web application layer, for easy interaction with the analyzed data.

React Job Board, React, Node.js, Express.js, Redis, Cron, Material-UI, TypeScript

- Constructed an hourly cron job, that caches GitHub Jobs API responses into Redis, and exposes that data via a Node.js server for a frontend web application.
- Avoids repetitive network requests to the GitHub API and improves latency considerably.

EDUCATION

Kalinga Institute of Industrial Technology, Bachelor of Technology (B.Tech)

2023 | India

- Computer Science and Engineering with a GPA of 9.56/10.0.

Delhi Public School, Ruby Park, CBSE

2019 | India

- Graduated CBSE with 93.4% (9.34/10.0 GPA) in Computer Science stream.