Samar Sajnani

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Experience

Senior Site Reliability Engineer – Blueshift San Francisco   Apr. 2022 – Present

- Ownership of reliability, configuration and operations of 410 applications running on AWS
- Only SRE member in the North American timezone with hiring responsibilities
- Responsibilities include incident (Datadog), infrastructure (Terraform and Nomad) and configuration management (Ansible)
- Able to help with software development in GoLang and Elixir as well as scripting work
- Helped migrate Elasticsearch 1 to Elasticsearch 7 that helped increase reliability and resiliency
- Found application optimizations that reduced AWS weekly costs by $3000 per week

Projects:

- Developed the terraform classes and nomad jobs for tile38 (a clustered geographic cache)
- Architected the OpsToolKit used to search across thousands of configurations on AWS and consul

Team Lead   June. 2021 – Mar. 2022
Senior Software Engineer   Dec. 2021 – June. 2021
Loblaw Digital Developer II – Productivity Engineering   Sept. 2019 – Dec. 2021

- Working with the internal tools team to "reduce toil, increase happiness and get sh!t done"
- Exposure to cutting-edge technologies such as Google Kubernetes Engine on GCP
- Development of metricized, scalable, fault-tolerant and highly available software
- Main languages and frameworks are Elixir, Phoenix Framework, GoLang, and Bash

Projects

- Setup metrics and monitoring for our applications using Prometheus, Grafana, and BigQuery
- Developed an application that automated the product recall process reducing 2 days of work a week
- Modularized the CI/CD pipeline in Gitlab for the tools team to reduce redundancy 9-fold
- Ownership of the nine application developed by the Internal Tools team
- Architected a service templating tool for Loblaws that automated the generation of code, pipelines and deployment of applications.

IBM Watson Data Platform Private Cloud Intern   May. 2017 – Aug.2018

- Interviewed candidates for full-time and internship roles
- Collected approximately 1300+ contributions on IBM's enterprise Github
- Won an award for DSX poster presentation and a CrushIT award for the ICP4D Installer
- Developed the SMTP framework for the dashboard team and the UI installer for the product
- Optimized CI/CD time by 50%+: created an automated framework ranging from provisioning to testing, presented the framework at CASCON, framework was run on Jenkins
- Lead developer for the ICP4D installer, a new product that made $12 million in 6 months

Research

POJO Model-Based Cloud Reconfiguration System   **Sept. 2018 – Present**
- Began as my thesis project that I continued working on outside of school
- Utilized the Kubernetes Java API as a metamodel to generate a POJO-based model of cloud services
- Developed an ecosystem for dynamic reconfiguration of Kubernetes microservices using Plain Old Java Objects (POJOs)
- Architectural patterns that were used include but are not limited to the Singleton, Abstract factory, and Adapter patterns

Implications:
- Simpler than other existing dynamic reconfiguration systems
- Novel since this system bypasses manual configuration of a metamodel and uses a metamodel inherent in the Kubernetes API, no such other Kubernetes dynamic reconfiguration system exists
- Use of the Kubernetes APIs ensures that the latest and complete set of Kubernetes functions are available to users

Components:
- Variable Fetcher (Using Java SpringBoot as the server and CompletableFuture for concurrency) - holds system logs as variables, these variables are required to evaluate policies
- Policy-Action Server (Java Spark server) - gathers variables from the fetcher and evaluates a tree-based policy, an action is generated as a response to policy validation or violation
- Metamodel server (Java Spark server) - encodes the atomic actions that can be performed on each type of microservices provided by Kubernetes, by using the Kubernetes Java API.

Literature Review on the k-Median Problem (Internet Algorithmics Course)   **Sept. – Dec. 2018**
- Meant to be completed by master's students, I volunteered to work on this paper to learn new things
- The current best approximation algorithm for the k-median problem has a ratio of about $1 + \sqrt{3} + \varepsilon$

Skills

Elixir: Worked with Ecto for database management, Phoenix as a web framework and OTP servers.
C++: Developed a transport layer protocol and Bluetooth Low Energy server for the LifeVector project
Cloud Computing: Knowledge of AWS, GCP, Kubernetes, Docker, Ansible and GlusterFS from IBM
Linux: Analysis of repositories, research on disk usage, logging, scripting, and creating installer executables
Web Development: Worked on multiple javascript projects such as FaStack, LifeVector, Capacity, and Aux

Projects

FaStack Mobile and Desktop Application   **Mar. 2018 – June 2019**
- Daily stack that allows users to schedule and prioritize everyday tasks using CPU scheduling algorithms

Life Vector Time-Management Mobile Application (Western University)   **Nov. 2017 – Present**
- An application that generates an activity profile by gathering a user's location and analyzing time usage

Education

BSc Honours in Computer Science: Western University (3.95/4.0 CS GPA)   **Received April 2019**
BMSc Honours in Biochemistry: Western University (3.6/4.0 GPA)   **Received April 2016**