NADUN DE SILVA

Team Lead and Software Engineer

in nadundesilva 🌐 nadundesilva.github.io ⦿ nadundesilva

Highly motivated Software Engineer with 4+ years of experience in cloud native application development and data analytics, performing above the top 5% of the employees at WSO2. Experience in designing large scale reliable architecture, UX, developing and deploying cloud native applications in production environments. Great track record in delivering quality outcomes and leading a team of engineers.

Work Experience

Associate Technical Lead
WSO2 📅 June 2021 – Present

- Achieved the Sustained Outstanding Contribution Award for the third consecutive year — currently awarded only for the top 5% employees in the company.
- Led another engineer, designed and developed the minimum viable features for Choreo online editor's automatic resource scheduling, within 1.5 months, using Kubernetes and GoLang.
- Reduced the startup time of the Kubernetes resources of the Choreo Editors by 80%, increasing the overall user experience.
- Reduced the MsSQL DB utilization by 60% by introducing a Redis cache and randomization of cache expiry times, increasing the number of users the system can handle.
- Met 97% of the targets and sprint milestones by prioritization of tasks and fostering a good working environment.

Senior Software Engineer
WSO2 📅 July 2019 – June 2021

- Led 2 engineers, designed and developed the minimum viable features for Choreo Observability within 3 months, creating a scalable backbone for Choreo Observability.
- Designed the architecture of Choreo observability storages with automated archiving to reduce the cost for the company while storing enough data for Machine Learning use cases.
- Redesigned and rewrote the observability instrumentation at Ballerina compiler intermediate representation level (previously done at Java bytecode generation level), within 1 month, to collect additional information, providing a better debugging experience for users.
- Maintained the lowest amount of bugs across all other areas and teams within Choreo by implementing proper code reviewing, testing and deployment practices within the team.

Software Engineer
WSO2 📅 Jan 2018 – July 2019

- Delivered the Cellery Observability minimum viable features within 2 months for observing microservice composites, using Kubernetes, Istio, OpenTracing and Envoy.
- Led the implementation of Cellery developer tools using Language Server Extensions for VS Code.
- Designed Cellery Hub backed by a Docker Registry as storage.
- Designed and implemented the Observability aspects of WSO2 Serverless Platform using Prometheus and Jaeger on top of Kubernetes and OpenWhisk.

Technical Skills

- **Programming Languages** — Java, GoLang, Python, JavaScript, TypeScript
- **Knowledge Domains** — Cloud Computing, Time-series Analysis, Observability, Deep Learning, Anomaly Detection, Stream Processing
- **Frameworks and Tools** — Git, Gradle, JMeter, Express, React, TensorFlow, Numpy, Pandas, Azure Event Hub (Kafka)
- **Storages** — Time-series Databases (Influx DB, Azure Data Explorer, Azure Time Series Insights), Data Lakes (Azure Data Lake), Relational Databases (MySQL, MsSQL), Redis
- **Deployment Tools and Technologies** — Kubernetes, Kustomize, Docker, GitOps, Prometheus, Jaeger

Licenses

Certified Kubernetes Administrator
The Linux Foundation 📅 Dec 2020

Certified Kubernetes Application Developer
The Linux Foundation 📅 Jan 2020

Education

B.Sc. (Hons.) in Engineering (Computer Science and Engineering)
University of Moratuwa 📅 2014 – 2017

- Achieved a GPA of 3.85 out of 4.20 obtaining a First Class.
- Placements in Dean's List in 6 out of 8 semesters at University of Moratuwa.
- Carried out an academic research on Anomaly Detection using Deep Learning techniques (VAE and Bidirectional GAN) with 2 publications.
- Awarded Global Finalist (Galactic Impact) in NASA Space Apps Challenge 2017.
- Successfully completed Google Summer of Code 2017.

Certifications

Fundamentals of Reinforcement Learning
Amii, University of Alberta 📅 September 2021

Build Basic Generative Adversarial Networks (GANs)
DeepLearning.AI 📅 June 2021

Deep Learning Specialization
DeepLearning.AI 📅 June 2021

Projects

Choreo

Digital innovation platform that allows you to develop, deploy, and manage cloud native applications at scale. Choreo manages the complete lifecycle of an application and deploys them in a production grade environment along with automated observability.

Cellery

Framework for developing Code first observable, secure composites for Kubernetes. Cellery implemented cell based architecture to improve the developer experience and collaboration. It supported observing the composites and a drill down view for detecting and debugging issues easily.

Ballerina

An open-source programming language for cloud native application development with builtin support for automated compiler level Observability instrumentation.

K8s Replicator

A Kubernetes controller implementing a control loop which copies Kubernetes resources across namespaces. This allowed SREs to manage common resources which needed to be shared across multiple namespaces (such as TLS secrets), to be managed centrally. The controller was built to support extending to any Kubernetes resource easily.

Publications

- T. Kumarage, S. Ranathunga, C. Kuruppu, N. De Silva and M. Ranawaka. (2019). Generative Adversarial Networks (GAN) based Anomaly Detection in Industrial Software Systems. In *2019 Moratuwa Engineering Research Conference (MERCon)* (pp. 43–48). doi:10.1109/MERCon.2019.8818750

- T. Kumarage, N. De Silva, M. Ranawaka, C. Kuruppu and S. Ranathunga. (2018). Anomaly Detection in Industrial Software Systems - Using Variational Autoencoders. In *Proceedings of the 7th International Conference on Pattern Recognition Applications and Methods - Volume 1: ICPRAM* (pp. 440–447). INSTICC. doi:10.5220/0006600304400447

Soft Skills

Leadership Skills   Presentation Skills
Communication Skills   Time Management

Languages

Sinhala ●●●●●
English ●●●●○

Interests

Deep Learning   Music
Reading   Martial Arts

Referees

Available Upon Request