Varad Ghodake

Georgia Institute of Technology | Masters in Computer Science

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Experience

DE Shaw and Co.

Hyderabad, India

Software Engineer (Quant Systems SRE)

July 2019 - May 2021

- ***Kafka adoption for incident-response systems:*** As a monitoring SME, redesigned event processing engine to facilitate event-sourcing with Kafka; bumped up the maximum event coverage capacity (SLO) upto ~2 million events/day.
- ***Web-service deployment framework:*** Implemented a service deployment framework in Puppet and Kubernetes-Helm to deploy highly-available web-services with *Service Registration mechanism*, NGINX setup for TLS & HTTP proxying (Ambassador pattern) as well as a log-shipping ElasticSearch-Filebeat component for analytics.
- ***Release Engineering:*** Conducted enterprise and DMZ Linux server patching and releases – servers that run ElasticSearch cluster, Vault secret store, and core infra services such as DNS, Puppet and Kerberos.
- ***Container registry and universal artifact repository deployment:*** Deployed and maintained a multi-site, multi-clustered, highly-available on-prem Universal Artifact Repository with Anycast routing for low-latency package uploads and downloads. Directly Responsible Individual for this system serving more than 600K artifacts with *three 9s level of availability SLO.*

DE Shaw and Co.

Hyderabad, India

Systems & Operations Engineering intern

May 2018 - June 2018

- ***Linux grid job submission infra:*** Improved fault-tolerance of 6 different *Apache Mesos* masters by 50% with *streaming replicas* using Postgres Patroni framework in a newly created hypercluster; saved *19%* monthly error-budget of the in-house Mesos PaaS.
- ***Systems Opsconsole:*** Analyzed tickets and system-wide issues reported for better operational efficiency. Built visualizations to provide insights.
- Designed and developed a Web-app with React front-end, Python backend and DE Shaw proprietary JavaScript libraries.
- On top of reducing *MTTD (Mean Time To Detect)*, the project also reduced *MTTR (Mean Time To Repair)* taken by SREs to fix users' NFS home directories, grid job submissions, active sessions and group memberships by 19%.

Education

Georgia Institute of Technology | MS Computer Science

Atlanta, Georgia

- Advanced Operating Systems, Intro to Information Security, Intro to Graduate Algorithms

August 2021 - December 2022

College of Engineering Pune (India) | BTech Computer Engineering | GPA: 9.09/10 (honors)

Pune

- System Administration, Distributed Systems, Computer Networks, Operating Systems, Data Science

2015-2019

Skills

Languages and frameworks Python, Go (Golang), Java, C++, SQL, bash, JavaScript, React

Container technologies Kubernetes, Docker/Podman, Helm, MLOps and orchestration with Kubeflow

Infrastructure technologies Microservices, Linux administration, Cloud Computing, HTTP/TCP load-balancing, Databases, Kafka, Puppet

Certifications Google cloud: SRE - Measuring and managing reliability
Designing Infrastructure Deployment on AWS

Projects and Activities

SketchX

COEP

Final Year BTech Project

2018-19

- The aim of the project was to have a POC for machine Learning based User Interface generation from hand-drawn sketches
- Methods used and detailed results published in *Springer – Advances in Intelligent Systems and Computing* | volume 1254
- Built a workflow-engine in Python to convert model-generated markup language code into HTML Document Object Model
- Designed Bootstrap Flex API integration mechanism for out-of-the-box UI responsiveness
- HTML tag identification accuracy: *93%*. Set up an OCR pipeline to identify handwritten text with the highest possible precision

Satellite mission: Swayam

Satellite Ground Station, COE Pune

ISRO (Indian Space Research Organization)

2015-2016

- Member of the Attitude Determination and Control Subsystem on India's first successful student satellite mission
- Contributed to the Satellite-motion physics library written in C language
- Removed singularity condition (*Gimbal lock*) in the simulation software by porting 3 dimensional satellite attitude matrix data to *quaternions*
- Built a web portal for ground stations in Spain, Russia and Australia to decode signals received from the satellite