Ranabroto Ghosh
Devops Engineer | Software Engineer | Team Lead
www.linkedin.com/in/ghosh-ranabroto
rudj.di@gmail.com +44 (0) 7841680956

Profile:

With a robust nine-year tenure as a software engineer complemented by four years of team leadership experience, I bring an accomplished background in developing cutting-edge cloud-native applications aligned with microservice architecture principles and message-oriented middleware. Throughout my journey, I have consistently delivered solutions characterized by high throughput and low latency, showcasing expertise in Java and its related frameworks. My proficiency extends to scripting languages such as Node.js more recently having developed distributed applications in container and serverless runtime.

Over the past couple of years, I've expanded my skill set in infrastructure operations, focusing on ClusterOps and AppOps on Kubernetes, CI/CD using CircleCI and GitOps. I've gained experience across a spectrum of AWS services while serving as a senior DevOps engineer in the data-intensive blockchain space.

In my next venture, I'm eager to leverage my extensive experience in developing modern applications on Kubernetes and cloud platforms to drive business value.

Education & Certification:

- B.Sc Hons in Software Engineering – University Of East London – First Class – 2012
- AWS Certified Solutions Architect – Associate – 2022 (VN: E6H8MYYC5MBE165V)

Skills:

- Development
  - Languages
    - Java 8, Java 11, Java 21, Node.js, Go
  - Application Framework
    - Spring Framework, Spring Boot
  - Integration Framework
    - Apache Camel, Mulesoft and Anypoint Platform
  - RESTFul Services, web-sockets.
  - Message-oriented middleware
    - Apache Kafka, Apache ActiveMQ, RabbitMq
- Agile and DevOps Engineering Practices
- Highly proficient operator and administrator of the Kubernetes container orchestration platform.
  - Ingress - Ingress controller, alb, nginx
  - StatefulSet - Redis
  - Operator Pattern - Datadog operator
  - Package Management- Helm
  - Gitops - Flux, Kustomize
  - APM Injection
- Continuous Integration and Continuous Delivery
  - Gitops - Flux
  - Pipeline - CircleCi, jenkins, GitLabCi

- Database
  - RDBMS - MySQL, MariaDB
  - NoSQL - DynamoDB, MongoDB
- Monitoring/Graphing
  - Grafana, Nagios, DataDog
- IaaS
  - AWS - EKS, ECS, EC2, S3, VPC, Elastic Beanstalk, RDS, IAM, CloudWatch, Config, Lambda, ELB
- PaaS
  - AWS Eks, Docker Swarm, AWS Ecs
- Virtualisation/Containerisation
  - Vagrant, Docker, VMWare

Employment History:

Elliptic Enterprises Limited, www.elliptic.co
Senior DevOps Engineer
May 2022 - Today

My primary expertise lies in the development and management of Kubernetes infrastructure, with a particular focus on architecting and developing cloud-native solutions. Key highlights include:

- Architecting and developing a cutting-edge cloud-native microservices-based system. This innovative solution consisted of interconnected Node.js applications leveraging RabbitMQ for seamless communication and scalability.
- Enhancing the system's functionality by incorporating AWS Lambda functions for serverless computing, enabling rapid execution of event-driven tasks with minimal operational overhead.
- Implementing AWS Config for advanced monitoring, alerting, and remediation capabilities, ensuring proactive management and maintaining optimal system health.
- Orchestrated seamless migration of stateful workloads across diverse Kubernetes versions, ensuring minimal to zero downtime.
- Oversaw GitOps implementation, managing FluxCD deployment strategies across all Kubernetes environments.
- Spearheaded FluxCD transition from v1 to v2 across multiple clusters, ensuring a meticulous and smooth upgrade.
- Managed comprehensive upgrade of an EKS cluster, specifically handling self-managed nodes to maintain uninterrupted system functionality.
- Effectively handling custom resources, migration from deprecated APIs, and ensuring minimal to zero downtime for critical workloads

GlobalCharge LTD, www.globalcharge.com
Senior Software Engineer/Team Lead
Nov 2017 - May 2022

Project: Open Banking Payment System

Open Banking is an initiative regulated by the FCA and their European equivalents and designed to bring more competition and innovation to financial services. Open Banking creates a new, frictionless way to

pay. GlobalCharge has refined and reduced the complexity of accessing the Open Banking network through a single API integration. This solution consists of systems Wrapper, Gateway, Transformer following microservice architecture pattern.

- **Wrapper:** A secure web application used by various merchants to trigger a payment on behalf of an end user. It simply exposes a single REST endpoint for merchants to integrate with the payment system. Once the API is triggered the application takes over the UI control and displays relevant html pages, takes user input then returns the UI control back to the merchant once the payment process is completed. Technologies used for this application are SpringBoot, Spring security, Thymeleaf, JavaScript, WebSocket, deployed in AWS EB.

- **Gateway & Transformer:** A scaleable middleware layer integrates with multiple PISP/AISP (payment providers) through specific transformer to support above Wrapper to complete a transaction. Transformer transforms multiple provider's output/input into a common pattern.

Technologies: Java11, Apache Camel, Spring Boot, JavaScript, MariaDB, Apache ActiveMQ deployed in premises with docker, docker swarm is used as orchestration tool.

Worked as a software architect and team lead, which includes following responsibilities

- Designing the payment flow across the systems.
- Deciding on technology stacks.
- Designing the backend integration flows for various AISP/PISP.
- End-to-End testing approach with stubs and mocks.
- Infrastructure management, installation and deployments.
- Hands on development along with the team.
- Team Lead (Hands-On)
- Operations Support

Project: Variable Recurring Payment System for SONY

Designed and developed a system to connect user's bank account with their PlayStation wallet to enable them to top it up from bank with a smooth process. This project was winner in a Hackathon organised by Devpost. Please find more details about the project on this link https://devpost.com/software/playstation-vrp

Technologies: Java11, Spring Boot, JavaScript, Apache ActiveMQ, MariaDB

Project: Transform monolithic Billing Gateway to microservices.

Successfully architected and implemented transformation of a monolithic application into a set of loosely coupled and independent microservices at GlobalCharge. The billing gateway was integrated with multiple aggregators and mobile operators, serving user traffic across various countries. Recognizing drawbacks like a single point of failure and maintenance difficulties in the monolithic approach, I led the identification of independent services: authentication, subscription, unsubscription and payment service etc. Then systematically decoupled these services from the monolithic application, utilizing Apache ActiveMQ, a message-oriented middleware, for communication (pub-sub model) between them. This strategic move streamlined code maintenance, accelerated the release cycle, and improved testing procedures.

Given the payment service's crucial role as an integration point for all aggregators/operators, I simplified the process by dividing it into two components – a generic part and a translator layer. The translator layer played a vital role in translating diverse API requests and responses into a standardized GlobalCharge processable format. This modular design facilitated the integration of new aggregators quicker, with the generic part's reusability eliminating code redundancy, adding aggregator-specific translation logic became a straightforward task.

GlobalCharge LTD,
www.globalcharge.com
Software Engineer
Sept 2012 - Nov 2017

Project: Carrier Billing Gateway for Android Application

GlobalCharge has mobile carrier billing library (micro billing) which can be embedded into mobile applications running over android platform. The library helps the app developer to charge the user of the app for purchasing the goodies e.g. superpowers within a game or additional features or credits for social and adult apps etc.

The library has an ESB back-end which integrates with various Aggregators to bill the user's phone (prepaid / post-paid) using various method such as sending automated text message to a short code, direct operator billing etc.
The library detects the mobile number by using various methods such text message, Header enrichment or IMSI lookup to ensure that the correct number is billed.
The library back-end supports subscription feature which is developed using the Quartz Scheduler The library back-end is designed and developed by using Apache Camel and Apache ActiveMQ technologies.
This library is extensively used by one of the biggest mobile dating apps and is live in around 18 markets across the world.

Technologies: Java8, Spring Boot, Apache Camel, Apache ActiveMQ, MariaDB

Worked as a senior software engineer, which includes following responsibilities

- Designing the back-end integration flows for various telecom operator billing systems
- End-to-End testing approach with stubs and mocks
- Infrastructure management, installation and deployments
- Operations Support

Project: User Control Panel and Working with existing Android SDK

Designed and developed a web application with Spring framework, JSF, Primefaces. During this also worked with existing android library in order to support different billing page modifications or any other user flow changes requested.