

Umar Hussain

Senior Software Engineer

Dresden, Germany

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Skills

Backend	Java, Quarkus, Apache NiFi, Python, Go, RabbitMQ, TypeScript, Node.js MongoDB, Redis, MySQL, Firestore, JUnit
Cloud & Infra	Kubernetes, Google Cloud (GCP), FluxCD, Prometheus, Grafana, Sentry, Firebase Crashlytics, OpenTelemetry
Tools	Helm, Kustomize, ExternalSecrets, Kuberenetes Operators, Traefik, WireGuard, OIDC, Keycloak, Jenkins, Bitbucket
Exposure	Pipelines, Testcontainers, Jira, OpenAPI, AsyncAPI, Git, Linux
Certifications	Terraform, Ansible, Istio, ArgoCD, AWS, Object Storage, Elasticsearch, Angular
Certifications	Certified Kubernetes Administrator, Certified Kubernetes Application Developer

Work Experience

Senior Software Engineer

Dresden, Germany

elevait GmbH & Co. KG

June 2021 - Present

- Improved multi-tenant Kubernetes cluster with 40+ nodes in production by implementing GitOps with FluxCD, Monitoring & Alerts with Prometheus, VPA resource recommendations and secrets managements with ExternalSecrets by utilizing multiple Kubernetes operators. This led to less operational overhead for teams, faster customer deployments, early detection of failures and k8s as a platform for dev teams.
- Designed and built data flows using Apache NiFi, a distributed data streaming tool and Java, to process large amounts of data with ML applications, facilitating efficient document processing and creation of business domain's Knowledge Graphs for 10+ customers across different domains. Added monitoring and alerts of input REST endpoints as well.
- Led the adoption of Event-Driven Architecture using RabbitMQ across 3 teams, overseeing the seamless transition of 4 internal microservices from REST API. Added autoscaling to the system based on custom metrics of queue message rate and length with KEDA and Kubernetes Horizontal Autoscaler.
- Implemented multi-tenancy for applications inside K8s via Network policies and also added access control in RabbitMQ server to avoid cross customer messages access. Added Keycloak SSO to multiple applications like Jenkins.
- Created Java applications to process 40,000 documents per month, with comprehensive test cases to perform media conversion between different formats like PDF, PNG, TIFF and JPEG for harmonizing documents types used across frontend, backend and machine learning teams.
- Added Prometheus custom metrics collection in Kubernetes for 10 applications. Also configured OpenTelemetry logs collector with SigNoz to store them in a central location.

Software Engineer - Working Student

Dresden, Germany

AI4BD Deutschland GmbH

March 2020 - May 2021

- Developed robust back-end applications with NestJS framework and MongoDB as datastore, offering REST API and WebSocket interfaces for frontend applications.
- Utilized Sentry as an error monitoring tool for backend and frontend applications in 10+ customer environments which provided the product owner more visibility in production environments.
- Crafted CI/CD pipelines with Bitbucket and Jenkins for E2E testing, semantic releases, and Docker image creation. Also added a local test setup for ease of use by developers. The parallel builds in pipeline helped reduce build time from 40 to 15 minutes.
- Transformed 15 application's bare Kubernetes manifests into Helm Charts, optimizing for reusability and fostering path towards GitOps.

Software Engineer

Islamabad, Pakistan

Teamo Inc.

May 2017 - September 2019

- Implemented Serverless applications using Node.js, Firebase and Google Cloud Functions for front-end and mobile applications of a Gift card marketplace.
- Utilized Elasticsearch for full text search on businesses information. Also utilized Spring for asynchronous data processing of mobile and fitness trackers.
- Designed and streamlined Android mobile applications for the marketplace platform, implementing efficient integration with Stripe payment processing, Geo-location queries, and seamless social logins.

Projects

Master Thesis Researched on multi-tenant microservices architecture for efficient deployment of SaaS applications.

Apache NiFi Contributed to open source upstream for improvements in RabbitMQ operations.

Education

Technische Universität Dresden

Dresden, Germany

M.Sc. Distributed Systems Engineering

October 2019 - January 2022

National University of Science and Technology (NUST)

Islamabad, Pakistan

B.Sc. Software Engineering

September 2013 - June 2017