

# Muhammad Ali Kahoot

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## § Role

Software / DevOps Engineer (Team Lead)

## § Publications

Medium: K8s-Deployments vs StatefulSets vs DaemonSets

Playbook: Bootstrapping a Github Organization through Terraform

Playbook: Introduction & Scenario for Sealed Secrets

## § Education

National University of Computer and Emerging Sciences, Islamabad BS (CS) — 2012 - 2016

### Achievements

- Top 14% on StackOverflow
- Employee of the Quarter (Oct - Dec 2018)
- Dean's list of honour for five semesters i.e. Fall 2012, Fall 2013, Fall 2014, Spring 2015, Spring 2016
- Won the Telenor Hackathon in health category

## § COMPETENCE

### Container Platforms:

Docker Containers, Kubernetes, OpenShift, AKS, EKS, IKS

## SUMMARY

Software & DevOps Engineer with more than 3.5 years of experience, I have a vast skill set ranging from Software Development to cloud related technologies like Docker Containers, Kubernetes, Helm, Jenkins, Terraform, AWS. I have a keen interest in working & exploring cutting-edge technologies which challenge my research & software development skills.

## EMPLOYMENTS

### Software / DevOps Engineer (Team Lead), Aurora Solutions (Stakater)

(<http://www.stakater.com>)

(<https://github.com/stakater>)

Islamabad, Pakistan — Apr'18-to date

Currently leading the Stakater (Team in Aurora Solutions) for development of the Stakater platform which provides an easy and secure way to create a Kubernetes based environment. Stakater leverages tools such as Kubernetes, Docker Containers, Helm, etc. My responsibilities include managing Stakater team, reviewing sprints and working on Stakater platform. I have closely worked in defining and implementing the architecture of Stakater. I have also worked on deploying complete infrastructure related stacks on Kubernetes/OpenShift using Helm which include monitoring stack, logging stack, etc.

### Technologies

AWS/Azure, Containers, Kubernetes, Jenkins, Github, Gitlab, Bitbucket, Slack, Prometheus, Grafana, Helm, Spring, GoLang, Kubernetes Controllers, GitOps, Flux, EFK stack.

### DevOps Instructor, Dice Analytics Pakistan ([www.diceanalytics.pk](http://www.diceanalytics.pk))

Islamabad, Pakistan — Jun'19-to date

Teaching professional course on DevOps with Github, Jenkins, Docker Containers, Kubernetes and Ansible

### Software Engineer, Bentley Systems Pakistan ([www.bentley.com](http://www.bentley.com))

Islamabad, Pakistan — Jun'16-to Apr'18

Worked in Research & Development team called STA (Strategic Technology Advancement). The team works on different projects prioritized and assigned by OCTO (Office of the CTO) for Bentley products

### Developer Intern, Code for Pakistan, LMKR Pakistan

Islamabad, Pakistan — Jun'15-to Aug'15

Worked with Code for Pakistan and LMKR in a joint venture. Developed an android app DocLocator through which one can find all the doctors in Islamabad using different search perspectives and fields.

## PROJECTS

### Deployment Architect, Movement of Pliro to Kubernetes

#### Migration of Pliro Application from Docker Compose to Kubernetes

Pliro is an application of Aurora Solutions which provides complete doctor management solution. It was previously deployed using Docker Compose on AWS and was taking a lot of resources so cost was increasing. We architected the complete workflow of moving Pliro to Kubernetes. It consists of 6 microservices & 2 environments Dev & Prod.. We moved it to Kubernetes, deploying with GitOps in Dev environment and CI/CD in prod environment. The code was managed in Bitbucket. The services were deployed through Helm using Helm Releases and SealedSecrets were used for k8s secrets,

### Tools & Technologies

Docker Compose, Bitbucket, Weaveworks Flux, Jenkins, Helm, SealedSecrets, Sonatype Nexus (Private Storage for Images, app artifacts, Helm Charts)

#### DevOps Tools:

Helm, Jenkins, Weaveworks Flux, Sealed Secrets Controller, Sonatype Nexus, Keycloak, Chartmuseum, Docker Compose, Terraform, Prometheus, Grafana, EFK stack, Istio

#### Programming:

.Net, .Net Core, Java, GoLang, Python

#### Version Control:

Git

## § TRAININGS / MOOCs

- Big Data Analytics & Machine Learning using Apache Spark + Java from Webixn Technologies
- Python & Data Science from Dice Analytics
- Docker Deep Dive by Nigel Poulton from Pluralsight

#### Coursera:

- Neural Networks and Deep Learning from Coursera
- Improving Deep Neural Networks from Coursera
- Structuring Machine Learning Projects from Coursera
- Deep Learning Specialization from Coursera (Currently Enrolled: Completed 3/5 courses)

**Architect, StakaterPlatform**(<https://github.com/stakater/StakaterPlatform>)

### **Architected Stacks for Platform related tools for Kubernetes/Openshift environment**

Worked on StakaterPlatform, and divided it into different stacks which are required for deploying your applications for CI/CD in Kubernetes/Openshift. The stacks can be deployed through helm on just a single command. The stacks and their corresponding tools are:

**Control:** ExternalDNS, Ingress Controllers, Reloader, efs-provisioner, HelmOperator, Sealed Secrets Controller, K8s Dashboard

**Delivery:** Jenkins, Nexus, SonarQube, RDLM, Chartmuseum

**Security:** Keycloak, ProxyInjector

**Logging:** Fluentd, ElasticSearch, Kibana, Curator, Logrotate, Cerebro

**Monitoring:** Prometheus Operator, Prometheus, Grafana, Node Exporter, Kube-State-Metrics, AlertManager

**Tracing:** Istio

All of these stacks are deployed through Helm Operator and can be configured to be deployed on any Kubernetes/Openshift cluster on a single command using Flux for GitOps

### **Developer, Terraform Azure Openshift**

(<https://github.com/stakater/terraform-azure-openshift>)

### **Create Openshift Cluster on Azure using Terraform**

Develop & manage Openshift cluster on Azure using terraform. We used already built modules and modified them to fit our needs.

#### **Tools & Technologies**

Terraform, Ansible, Openshift, Azure

### **Developer, EKS on AWS using Terraform**

### **Create EKS(Managed Kubernetes) on AWS using Terraform**

Develop & manage an EKS cluster on AWS using terraform. EKS is the managed Kubernetes offering of AWS. We used already built modules and leveraged it to create an EKS cluster for our needs..

#### **Tools & Technologies**

Terraform, EKS, AWS

### **Deployment Architect, Email Service Application**

### **Created a CIOps & GitOps(Flux) workflow for Email Service Application using SealedSecrets**

Developed a deployment workflow for an Email Service Application with GitOps for dev and CIOps for qa & prod environments in Openshift cluster. We used Jenkins for CIOps and WeaveWorks Flux for GitOps. Whenever a microservice was updated, the change is automatically reflected in dev environment using WeaveWorks Flux(GitOps) and the change was committed to qa & prod manually and a Jenkins pipeline(CIOps) got triggered for updation there. The code was managed in Bitbucket. The services were deployed through Helm using HelmReleases and SealedSecrets were used for k8s secrets,

#### **Tools & Technologies**

Bitbucket, Weaveworks Flux, Jenkins, Helm, SealedSecrets, Openshift, Sonatype Nexus(Private Storage for Images, app artifacts, Helm Charts)

## Hosting static websites

### Host static websites using AWS S3 & Cloudfront through Terraform

Developed a complete module to host static websites using AWS S3 & Cloudfront through terraform. Created everything required through terraform modules. Can be used for any type of static website

#### Tools & Technologies

Terraform, AWS, S3, Cloudfront, Route53, Certificate Manager

## Deployment Architect, Carbook

### Created a complete CI & CD workflow for Carbook microservices through Jenkins & GitLab

Developed complete CI/CD workflow to deploy Carbook application (Aurora Solutions Product) on kubernetes cluster. Carbook consists of many microservices with different technology stack, so created different pipelines for each of them. The code was managed in GitLab and Jenkins is used for the pipelines. All the services are deployed through helm charts using Umbrella Charts concept making it suitable to deploy them in different environments like mock, dev and prod.

#### Tools & Technologies

Jenkins, GitLab, Helm, Kubernetes, Sonatype Nexus(Private Storage for Images, app artifacts), ChartMuseum

## Developer, Kubernetes Controllers

- **Jamadar** (<https://github.com/stakater/Jamadar>)  
Kubernetes clean-up application for Dangling resources
- **Chowkidar** (<https://github.com/stakater/Chowkidar>)  
Kubernetes controller for observing events

#### Technologies

Kubernetes, Go, Slack API

## Contributor, Kubernetes Controllers

- **Reloader** (<https://github.com/stakater/Reloader>)  
Controller to watch changes in ConfigMap and Secrets and performs rolling update on Pods
- **IngressMonitorController**  
(<https://github.com/stakater/IngressMonitorController>)  
Controller to watch ingresses and create liveness alerts for your apps/microservices

#### Technologies

Kubernetes, Go, Slack API

## Developer, Connect Containers, Bentley Systems

### Refactor the Monolithic Services into more maintainable and scalable microservices, using Docker Containers and Kubernetes

Re-modelled and re-architected the monolithic Bentley Connect Services to a microservices based architecture and deployed them in Docker Containers and Kubernetes using Azure Kubernetes Service. Implemented the micro-services on CQRS (Command Query Responsibility Segregation) and Event Driven Pattern and use Azure Service Bus Topics as the event queue. Made the performance of the Read Service faster by implementing Materialized Views using NOSQL in Azure CosmosDB. Created a CI/CD pipeline using Microsoft VSTS Task based definitions. Implemented Istio as Service Mesh in the cluster and used Zipkin for Distributed Tracing for the micro-services.

#### Technologies

Containers, Kubernetes, Azure Kubernetes Service, Azure Service Bus Topics, Azure CosmosDB, Istio, Zipkin,