

# ABDULLAH AL MARUF

## SOFTWARE ENGINEER

### LIFE PHILOSOPHY

"Do not fear failure but rather fear not trying"

- Roy T. Bennett

### CONTACT

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Waco, TX, USA

### EDUCATION

M.S. in Computer Science  
*Baylor University*

Session 2020-2022(August)

B.Sc. in Computer Science  
& Engineering

*Chittagong University of  
Engineering & Technology*

Session 2012-2017

### TECHNICAL SKILLS

GO C++ C Java Python

Kubernetes Docker AWS

GCP Azure PostgreSQL

MySQL MongoDB Bash

Git Spring Boot Linux

### STRENGTHS

Team Work Self Learning

Communication Optimist

Problem Solving

### PROFILE

Passionate software engineer with 4 years of software development experience in Go, Java, and C++. Also worked as a DevOps Engineer for a year to gain hands-on experience of the infrastructure. Acted as team lead of AppsCode's KubeDB project. Love to participate in programming contests. An enthusiastic team player.

### EXPERIENCE

#### Graduate Research Assistant

Jan, 2021 - Present

##### Baylor Cloudhubs Lab

Waco, TX, USA

<https://github.com/cloudhubs>

- Performed analysis on telemetry log tracing to reconstruct Microservice architecture and service dependency graph (SDG).
- Automated microservice anti-pattern detection from runtime analysis.
- Technology Used: Java, Spring Boot, Docker, Docker Compose, Kubernetes.

#### Intern

Summer 2021

##### Red Hat

Brno, CZ (Remote)

<https://research.redhat.com/>

- Led a small team of undergraduate students to conduct research on technical debt visualization of microservice anti-patterns.
- Analyzed version controlled codebase to find probable code debts.
- Performed literature review study on technical debt and code smells.
- Technology Used: Java, Spring Boot, Git.

#### DevOps Engineer

Feb, 2020 - Dec, 2020

##### Digital Healthcare Solutions


Dhaka, Bangladesh


<https://dh.health>


Formerly known as Telenor Health. DH makes high quality health services and health financing accessible for all.


- Assisted on the deployment & migration of the scalable cloud infrastructure to Kubernetes.
- Collaborated with multiple teams to design scalable software systems.
- Improved service auto-scaling, which reduced the server's financial cost by ~25%.
- Exercised cloud-native best practices for DevOps automation, deployment, monitoring, and alerting.
- Technology Used: AWS, Kubernetes, Ansible, Terraform, Docker, Docker Compose, Traefik, Nginx, HAProxy, Prometheus, etc.

## PROUD OF


 **Competitive Programming**  
- Solved **1100+** problems on different Online Judges.  
- Divisional Champion of ACM ICPC Dhaka Regional '14 & '15


 **Open Source Participation**  
User, follower, and contributor.


 **KubeDB's growth**  
From very few to thousands of daily users.

 **Leadership**  
Served as President of Cuet Computer Club. Also acted as team lead of KubeDB.


## TOP OPEN SOURCE CONTRIBUTION

 **kubernetes/kubernetes**  
Production-Grade Container Orchestration.

 **kubedb**  
Database management tool for Kubernetes.

 **stash**  
Backup and restore plugin for Stash.

 **kmodules/client-go**  
Kubernetes client-go utilities

 **appscode/analytics**  
Essential analytics for OSS

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 [linkedin.com/in/maruftuhin](https://www.linkedin.com/in/maruftuhin)  
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## EXPERIENCE

### SOFTWARE ENGINEER

 May, 2017 - Jan, 2020

*AppsCode Ltd.*

 Dhaka, Bangladesh

A platform for automating the deployment, scaling, and management of containerized applications.

- Developed **Kubernetes controller** tools to utilize Kubernetes services.
- Design and development of **KubeDB** project, A database management tool for Kubernetes.
- **Led team members** to design and implement the core features of KubeDB.
- Improved the reliability of the KubeDB application, which resulted in a **~200%** increase in returning users.
- Used: **Go, Kubernetes, Docker, MongoDB, Elasticsearch, GCP, AWS, Azure.**

## TOP PROJECTS

### KubeDB

 <https://kubedb.com>

A cloud-native database management solution for Kubernetes to simplify and automate **provisioning, backup, recovery, failure detection** for various popular databases.

- **Led a team of four members** to design & implement the core features.
- Added support for four new databases from scratch.
- Designed and implemented MongoDB clustering system support.
- Improved PostgreSQL and Elasticsearch clustering system.
- Worked with Prometheus exporters to export database metrics.

### Stash

 <https://appscode.com/products/stash>

A volume backup tool designed for Kubernetes. Under the hood, it uses Restic for backup/restore purposes.

- Improved database backup system using stash.
- Designed and implemented Elasticsearch and MongoDB cluster backup system from scratch.
- Integrated Stash support within **Kubedb** to backup/restore dbs.

### BearMapping

A **team-management** project that uses **machine learning** to do an automatic literature review. It identifies relevant research papers that correspond to particular research questions.

- The backend was built with Java Spring Boot and Python, and the frontend was built with ReactJS.
- Followed cloud-native best practices to develop and deploy the microservices.

### Microservice Architecture (MSA) Reconstruction

- Software architecture reconstruction (SAR) from tracing log.
- Automatically detection of anti-patterns from SAR
- Used Istio to collect the tracing log, JAVA to process it, and Graphviz to generate the architecture graph.