

ABDULLAH AL MARUF

SOFTWARE ENGINEER

LIFE PHILOSOPHY

"Do not fear failure but rather fear not trying"

- Roy T. Bennett

CONTACT

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<https://maruftuhin.com>

Waco, TX, USA

EDUCATION

M.S. in Computer Science
Baylor University

Session 2020-2022(December)

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 MongoDB

Linux Git Bash Cloud Native

Spring Boot Distributed Systems

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 AppCode'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).
- Developed tools for automated microservice anti-pattern detection from runtime analysis.
- Technology Used: Java, Spring Boot, Docker, Kubernetes, Istio.

Intern

Summer 2021, 2022

Red Hat

Brno, CZ (Remote)

<https://research.redhat.com>

- Led a small team of undergraduate students to conduct research on technical debt and visualization of microservices 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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-  github.com/the-redback
-  stackoverflow.com/u/4628962
-  twitter.com/maruf2hin
-  <https://maruftuhin.com>
-  codeforces.com/profile/the_redback

EXPERIENCE

Software Engineer

 May, 2017 - Jan, 2020

AppsCode Ltd.

 Dhaka, Bangladesh

 <https://appscode.com>

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://stash.run>

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.