

Abdullah Al Maruf

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PROFILE

Software Engineer with 7 years of experience building distributed systems and cloud-native infrastructure. Developed Kubernetes controllers in Go and designed scalable platforms across AWS and Azure using Infrastructure as Code (IaC) with Terraform. Skilled in backend development with Java and algorithmic problem-solving in C++. Served as Team Lead for the KubeDB project at AppsCode.

TECHNICAL SKILLS

Languages:	Go, Java, C++, Python, Bash
Cloud & Orchestration:	Kubernetes, Docker, AWS, Azure, GCP, EKS, AKS, GKE
Infrastructure & CI/CD:	Terraform, Helm, ArgoCD, Ansible, Jenkins, GitHub Actions
Frameworks & Runtimes:	Spring Boot, Node.js, Express
Databases & Messaging:	PostgreSQL, MongoDB, Redis, Kafka, RabbitMQ
Networking & Observability:	Istio, Linkerd, Prometheus, Grafana, Linux, Git

EXPERIENCE

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|---|---|
| Software Engineer II
<i>ZEISS Medical Technology</i> | Oct 2022 – Present
<i>Temple, TX, USA</i> |
| <ul style="list-style-type: none">Promoted from Software Engineer to Software Engineer II in Oct 2024 based on exceptional performance in cloud-agnostic refactoring and infrastructure optimization.Migrated software and infrastructure from AWS ECS to Kubernetes on Azure AKS, achieving 2x faster system performance.Collaborated with cross-functional teams to analyze and design high-level system architecture.Designed and implemented Infrastructure as Code (IaC) with Terraform, Helm, and ArgoCD, with monitoring and alerting via Prometheus and Grafana.Developed backend services in Node.js to seamlessly integrate with AWS and Azure resources, unifying the codebase for cloud-agnostic and scalable development. | |
| Intern
<i>Red Hat</i> | Summer 2021, 2022
<i>Brno, CZ (Remote)</i> |
| <ul style="list-style-type: none">Led a team to analyze technical debt from architectural degradation and code smells.Analyzed issue tickets and version control data to identify and quantify code debt.Applied static analysis and process mining to detect architectural degradation in microservice systems.Technologies: Java, Spring Boot, Git, Static Analysis. | |
| DevOps Engineer
<i>Grameen Digital Health</i> | Feb 2020 – Dec 2020
<i>Dhaka, Bangladesh</i> |
| <ul style="list-style-type: none">Designed and migrated scalable infrastructure to Kubernetes, ensuring high availability and resilience.Managed hybrid cloud infrastructure consisting of AWS and on-premises OpenStack, implementing automation pipelines for deployment and scaling.Optimized CI/CD workflows using Terraform, Ansible, Jenkins, and Docker, improving consistency.Enhanced system reliability and cost efficiency by implementing monitoring (Prometheus, Grafana) and improving auto-scaling (25% cost reduction). | |
| Software Engineer
<i>AppsCode Ltd.</i> | May 2017 – Jan 2020
<i>Dhaka, Bangladesh</i> |
| <ul style="list-style-type: none">Designed and implemented KubeDB in Go, a Kubernetes-native database management platform built to operate consistently across GCP, AWS, and Azure Kubernetes clusters.Led a team of 5 engineers to develop core KubeDB features, improving clustering, failover, and operational reliability for MongoDB, Elasticsearch, and PostgreSQL, resulting in a 3x increase in returning users.Improved database reliability by implementing automated backup and recovery workflows using Stash.Built automation and observability features and expanded community adoption via Slack and meetups. | |

PROJECTS

- KubeDB** | *Go, Kubernetes, PostgreSQL, Elasticsearch, MongoDB* | [GitHub](#) Aug 2017 – Jan 2020
- Built Kubernetes Custom Resource Definitions (CRDs) and controllers in Go to manage database lifecycle operations within Kubernetes clusters.
 - Developed modular operator architecture including API machinery, CLI, installer, and database-specific controllers for PostgreSQL, MongoDB, Elasticsearch, Redis, and MySQL.
 - Implemented reconciliation loops, leader election, and rolling upgrade mechanisms for reliable distributed database orchestration.
- Stash** | *Go, Kubernetes, restic* | [GitHub](#) May 2019 – Dec 2019
- Kubernetes-native disaster recovery solution using restic for backup and restore volumes and databases.
 - Designed and implemented database-aware backup and Point-in-Time Recovery (PITR) workflows for MongoDB and Elasticsearch using custom hooks, sidecar orchestration, and scheduled snapshots to ensure data consistency.
 - Integrated Stash with KubeDB and built backup pipelines with automated recovery, improving database reliability across Kubernetes environments.
- Microservice Architecture (MSA) Reconstruction** | *Java, Spring Boot, Istio* | [IEEE](#) Jan 2021 – May 2022
- Designed a Software Architecture Reconstruction (SAR) framework in Java to generate dynamic service dependency graphs by parsing Istio distributed tracing logs.
 - Developed engine to detect runtime anti-patterns and architectural drift via telemetry analysis.
 - Implemented automated visualization pipelines for architecture tracking and system auditing.
- BearMapping** | *Java, Spring Boot, Python, Docker Compose* | [GitHub](#) Jan 2022 – May 2022
- Built a Java Spring Boot microservices backend to automate literature review workflows and identify research papers based on user-defined queries.
 - Developed data ingestion and NLP pipelines in Python to process and index large volumes of research papers for efficient search and discovery.
 - Containerized services and deployed using Docker Compose to enable reproducible environments and simplified microservices orchestration.

PUBLICATIONS

- Microservice Architecture Reconstruction and Visualization Techniques: A Review**
IEEE SOSE, 2022 (110 citations)
- On Microservice Analysis and Architecture Evolution: A Systematic Mapping Study**
Applied Sciences, 2021 (106 citations)
- Using Microservice Telemetry Data for System Dynamic Analysis**
IEEE SOSE, 2022 (56 citations)
- Full Publication Record (600+ citations):** [Google Scholar Profile](#)

EDUCATION

- Baylor University** Waco, TX, USA
M.S. in Computer Science
- Chittagong University of Engineering & Technology** Chittagong, Bangladesh
B.Sc. in Computer Science & Engineering

IMPACT & LEADERSHIP

- Competitive Programming:** Solved **1100+** problems on different online judges; Divisional Champion of ACM ICPC Dhaka Regional 2014 & 2015.
- Research Impact:** Published **12 peer-reviewed papers** with **600+ citations** in microservice architecture, observability, and distributed systems.
- Leadership:** Led KubeDB development and served as President of CUET Computer Club.