

MD MAHBUB ALAM

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RESEARCH INTERESTS

Security in Computer Systems and Networks, Automated Vulnerability Detection, Program Analysis

EDUCATION

Syracuse University August 2023 - Present
Ph.D in Computer/Information Science and Engineering Syracuse, NY

Bangladesh University of Engineering and Technology (BUET) Feb 2013 - Sep 2017
Bachelor of Science in Computer Science and Engineering *CGPA: 3.57 (out of 4.00)* Dhaka, Bangladesh

WORK EXPERIENCE

Syracuse University August 2023 - Present
Graduate Research Assistant Syracuse, NY

- Designed and implemented text to IoT policy translator using LLM and developed policy language validator using grammar parser.
- Implemented an input generator using Z3 Theorem Prover to generate inputs compliant with the PKCS#1-v1.5 standard.
- Created a fuzz campaign platform designed for conducting experiments by employing various fuzzers and test subjects.

Intuitive Web Solutions LLC (BriteCore) Redwood City, CA
Senior Site Reliability Engineer (remote) March 2022 - July 2023

- Improved monitoring of application performance and failures. Automated detection and healing of system failures.
- Diagnosed, investigated, and resolved system incidents, and performed post-incident reviews.
- Investigated security vulnerabilities and implemented security best practices across cloud infrastructures.
- Implemented monitoring and optimization of resource allocation in batch processing, which reduced infrastructure costs by 10%.

Senior Cloud Engineer(remote)

Oct 2021 - Feb 2022

- Modularized cloud infrastructure as code using AWS CDK and Cloudformation.
- Developed deployment portal to manage applications and cloud infrastructures in 100+ AWS accounts.
- Automated upgrading 100+ production AWS database clusters ensuring minimal downtime.

Cloud Engineer (remote)

Aug 2019 - Sep 2021

- Configured multi-master shared ElasticSearch cluster and exposed this service to multiple AWS accounts securely through AWS Private Link.
- Developed and improved CI/CD release and deployment pipelines used by 40+ products.
- Migrated legacy application from EC2 instance to Elastic Container Service.

Field Information Solutions Ltd

Dhaka, Bangladesh

Software Engineer

May 2018 - Jul 2019

- Developed API endpoints to support both web application and mobile application for last-mile sales distribution product.
- Revised and modularized old codebase to increase the code re-usability in new projects.

Reve Systems

Dhaka, Bangladesh

Junior Software Engineer

Oct 2017 - Apr 2018

- Developed source code generator using Java and Apache Velocity template engine, which ensured coherent structure and style of the codebases and enhanced development speed.
- Worked on high-performant SMS server application utilizing SMPP protocol.

UNDERGRADUATE THESIS

Solving Sudoku as a Constraint Satisfaction Problem and Analyzing Effects of Constraint Ordering

The problem of solving the Sudoku puzzle is an NP-Complete problem. We formulated it as a Constraint Satisfaction Problem and solved using constraint programming. In this thesis, we introduced constraint ordering based on different criteria to determine the effects of constraint ordering. Our experiment result shows that ordering the constraints based on the number of clues gives better resolution time than unordered constraints.

Supervised by Abu Wasif, Assistant Professor, Department of CSE, BUET, wasif@cse.buet.ac.bd

TECHNICAL SKILLS

Programming Languages	Python, JavaScript, C, C++, Java
Database	MySQL, PostgreSQL, DynamoDB, Oracle
Framework	Django, Flask, VueJS
Container Orchestration	Docker, Kubernetes, Elastic Container Service
Cloud	Amazon Web Services (AWS)
Others	Linux administration, Terraform, SaltStack, Git, Bash Scripting, AFL, Vagrant

LICENSES & CERTIFICATIONS

CKA: Certified Kubernetes Administrator	Aug 2022 - Aug 2025
<i>Issued by</i> The Linux Foundation	See Credential
LFCS: Linux Foundation Certified Systems Administrator	Jun 2022 - Jun 2025
<i>Issued by</i> The Linux Foundation	See Credential
AWS Certified Solutions Architect - Professional	Mar 2022 - Mar 2025
<i>Issued by</i> Amazon Web Services Training and Certification	See Credential
AWS Certified DevOps Engineer - Professional	Oct 2021 - Oct 2024
<i>Issued by</i> Amazon Web Services Training and Certification	See Credential

AWARDS

2nd Runner-up in Software Project Show. My team was awarded the 2nd runner-up position at the **2nd International Conference on Networking Systems and Security, 2016** for **University Residence Hall Management System** project in the software project show section.