

MD MAHIR ASEF KABIR

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CAREER SUMMARY

Ph.D. student working on research areas of Software Engineering, Software Security, & Programming Languages. Have sound experience of creating scalable backend APIs for desktop & web applications while working as a software engineer for 3.5 years. Skilled in competitive problem solving using optimized algorithms & data structures.

EDUCATION

PhD Student, Department of Computer Science

August 2019 - (Expected) May 2024

Virginia Tech, Blacksburg, Virginia, USA

BS, Department of Computer Science & Engineering

Oct 2011 - Jan 2016

Ahsanullah University of Science and Technology, Dhaka, Bangladesh

TECHNICAL SKILLS

Programming Languages

C, C++, Java, C#, JavaScript, Python

Libraries & Frameworks

Entity framework, jQuery, Fabric.js

Database Management Systems

MySQL, Microsoft SQL Server

Source Controls

TFS, SVN, Git

TECHNICAL RESEARCH PROJECTS

Detection of Java Projects' Metadata Related Bugs

Ongoing

- Creating an external domain specific language from scratch (writing grammar syntax, generating parser, & developing language engine) to detect Java project's metadata related bugs
- Prepared 15 different patterns of metadata related bugs

Usage investigation of NPM package-related best practices

Aug 2022

- Investigated how securely developers follow security related best practices for NPM packages
- Wrote all the data-collection related scripts (web scraping, Git accessing etc.) from scratch
- Conducted user studies by creating issues for 4 categories of best practice violations
- Published a paper in IEEE SecDev 2022: <https://ieeexplore.ieee.org/abstract/document/9973037>

Detection & Repairment of Java security-API misuses

Mar 2022

- Worked on creating an Example-Based approach to detect & repair security-API misuses for Java
- Created Pull Requests to communicate with developers for user studies
- Published a paper in ICPC 2022: <https://dl.acm.org/doi/abs/10.1145/3524610.3527895>

Performance analysis of tools for detecting cryptographic API misuses

Feb 2022

- Investigated how far existing tools have come to detect Java Cryptographic API misuses
- Collected GitHub data, and communicated with developers for user studies
- Published a paper in IEEE TSE 2022: <https://ieeexplore.ieee.org/document/9711933>

RELEVANT WORK EXPERIENCE

Software Engineer, Enosis Solutions, Dhaka

Nov 2015 - Aug 2019

Project: Treeno Software

- Enhanced features of Treeno Document Management System, using **.NET & jQuery**, to **create admin panel** and user grouping
- Developed Treeno API, using **.NET Core & MS SQL Server**, to **segregate backend code** and to **reduce lines of code by 60%**
- **Improved code quality** of Treeno API, using **Dependency Injection & Generic Methods**, to reduce server communication by **50%**

Project: Insightformation

- Built features of InsightVision workflow management application, using ASP.NET MVC, Entity Framework & Fabric.js, to introduce **workflow diagram designing tool**

COMPETITIVE PROGRAMMING ACHIEVEMENTS

- **5th** in SUB Inter University Programming Contest 2016
- **15th** in **National Collegiate Programming Contest(NCPC)** at RUET, 2015
- **3rd** in IUBAT Inter University Programming Contest 2014