

MD ATIQUR RAHMAN

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RESEARCH INTEREST

Software Supply Chain Security, Application of LLMs in Software Security

EDUCATION

North Carolina State University

Aug 2024 - Current

PhD in Computer Science

- **Advisor:** Dr. Alexandros Kapravelos
- **Affiliation:** Wolfpack Security and Privacy Research (WSPR) Lab

Bangladesh University of Engineering and Technology

Feb 2017 - May 2022

B.Sc in Computer Science and Engineering

- **CGPA:** 3.69/4.00
- **CGPA in Last 4 Terms:** 3.86/4.00

PUBLICATIONS

Cri-Astrologer: Predicting Demography of Involved Criminals based on Historical Data

NSysS '22: Proceedings of the 9th International Conference on Networking, Systems and Security

December 2022

- Undergraduate Thesis
- **Field:** Computational Criminology
- **Supervised by:** A. B. M. Alim Al Islam
- **Methods:** Data Analysis and Preprocessing, Feature Engineering, Exploration of Open-source Deep Learning Algorithms

WORK EXPERIENCE

IQVIA

May 2022 - July 2024

Software Engineer, Tech Analytics

- Worked on different database systems like MSSQL, Postgress, Snowflake, Firebolt, Oracle, MongoDB and Amazon Redshift.
- Worked with various cloud services, including Kubernetes, Azure, and AWS.
- Led research and development efforts to enhance database query performance, reduce query counts, and explore cost-efficient solutions.
- Worked on an R&D project focused on transforming user interactions with data visualization by simplifying complex dashboard configurations through the integration of large language models.

RESEARCH EXPERIENCE

Longitudinal Analysis of Permissions in Node.js

Aug 2024 - Present

npm Ecosystem Attack Surface Analysis, WSPR Lab

- Investigating the evolution of permission usage in Node.js with changes in dependencies over time.
- Developing metrics to quantify the attack surface based on permission usage.
- Designing methods to minimize the attack surface through fine-grained permission restrictions.

Generative-AI Enhanced Data Visualization

June 2023 - July 2024

Gen-AI Chatbot 2.0 MVP Project, IQVIA

- Explored various large language models including GPT, Llama and Mistral.
- Worked with different AWS services such as Amazon Lex, Amazon Sagemaker, and AWS Lambda.
- Explored different streaming techniques, pattern matching and fuzzy matching techniques for optimization.

PERSONAL PROJECTS

DNS NXDOMAIN Flood Attack | C, Wireshark, Oracle VM VirtualBox

Computer Security

[Project Link](#)

- Implemented an NXDOMAIN Flood attack on DNS servers using non-existent or invalid domain names.
- Implented a defense mechanism to prevent NXDOMAIN Flood attacks.

Traan-Chitro | Vue.js, Node.js, MongoDB

Voluntary Project, Web Development

[Project Link](#)

- Developed a web-based relief coordination platform for non-government relief organizations in the COVID pandemic period so that those organizations can reach out to more people in need.

E-luxurious | Vue.js, Node.js, MongoDB

Web Development

[Project Link](#)

- Developed a web-based property renting platform which had similar functionalities to Airbnb.

MAD360 - Media Development Tool | React.js, Django, Postgres

Funded Project, Software Development

- Developed a web-based experimental advertisement budget management system funded by Unilever, which is supposed to reduce about 60% of the manual labor done before.
- Used Python based mathematical modules to calculate complex budget quantities more accurately and faster than before.

Line of Action | Java, Slick2D

Game, Artificial Intelligence

[Project Link](#)

- Used minimax & heuristic algorithms to find optimal moves for AI by implementing a Line of Action game with AI vs Human and Human vs Human playing options.

TECHNICAL SKILLS

Programming Languages	C, C++, C#, JAVA, Python, JavaScript
Programming Frameworks	Node.js, Django, .NET
Database Systems	MSSQL, Postgres, Oracle, Snowflake, Firebolt, Redshift, MongoDB
Cloud Platforms	AWS, Heroku
Tools	Git, L ^A T _E X, Docker

AWARDS AND ACHIEVEMENTS

Platinum Tier Award, IQVIA Impact Program	2023
Dean's List, BUET	Last 4 terms of undergraduate program
Champion - Industrial Automation Challenge v2.0, BUET	2017

CERTIFICATES

Deep Learning Specialization	deeplearning.ai - Coursera	Course Certificate
Fundamental of GIS	UCDAVIS	Course Certificate
GIS Data Formats, Design, and Quality	UCDAVIS	Course Certificate