

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

Tracking the Hidden Drifts: Evolution of Dependencies and Capabilities in npm Packages

npm Ecosystem Attack Surface Analysis, WSPR Lab

Aug 2024 - Present

- Measuring how npm package dependency graphs evolve across different versions over time.
- Quantifying changes in inherited security-sensitive APIs over time with changes in transitive dependencies.
- Analyzing change patterns across popular packages and maintainer groups.

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.
- Implemented a defense mechanism to prevent NXDOMAIN Flood attacks.

NCDMV Appointment Crawler | Python

Voluntary Project, Web Crawling

[Project Link](#)

- Developed an automated crawler that monitors NC DMV appointment slots and sends real-time Discord alerts, packaged with Docker for easy deployment.

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