Mohammad Ishtiaq Ashiq Khan

CS PhD Student at Virginia Tech

Address: Blacksburg, Virginia, USA
Phone: +15404498267
E-mail: ishtiaqashiq5@gmail.com, iashiq5@vt.edu
GitHub, LinkedIn, Google Scholar
Website: https://ashiq5.pythonanywhere.com/

Highlights

- Have advanced knowledge of OOP, algorithms, data structures, computer networks, network security, and relational DBMS.
- Demonstrated strong teamwork skills in collaborative research and multiple team projects.
- Developed effective communication skills by interacting with students at different levels of expertise while being employed as a university lecturer.
- Contributed to two open source projects in TextAttack and Mail-in-a-Box.

Work Experience

Graduate Research Assistant, Virginia Tech
Supervisor: Dr. Taejoong Chung

- Curating experiments, designing APIs, and analyzing big data to identify flaws and mismanagements in applications of public key infrastructure (PKI)
- Deployed a production-level measurement platform for scanning an email authentication vulnerability
- Stack: PySpark, MongoDB, PostgreSQL, Node.js, Docker, Django Rest, Redis, AWS, etc.

Lecturer at United International University, Dhaka, Bangladesh
Department of CSE *Jul '19 - Jan '21*

- Taught Network Security, Artificial Intelligence Laboratory, Object Oriented Programming, etc.
- Supervised student projects

Full Stack Software Engineer at InfoSapex Limited, Dhaka, Bangladesh
Department of Design and Development *Nov '18 - Jul '19*

- Successfully released a Procurement Management System in production contributing more than 60% to its development.
- Served as a technical point of contact with clients and carried out requirement analysis.
- Significantly reduced server provisioning time by automating configurations with Puppet and recovery time by setting up monitoring service with Munin and Nagios.
- Stack: Django Rest, Node.js, jQuery, HTML, CSS, Bootstrap, PostgreSQL, Celery

Educational Qualification

Virginia Tech, Blacksburg, Virginia, USA
Ph.D., Computer Science and Applications *Jan '21 - Dec '24 (Expected)*
CGPA: 3.95/4.00 (Ongoing)

Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh
Bachelor of Science, Computer Science and Engineering *Jul '14 - Oct '18*
CGPA: 3.83/4.00

Research Interests

Network Security and Measurement, Data Analysis, Machine Learning

Publications

Understanding TTL Violation of DNS Resolvers at scale
Supervisor : Dr. Taejoong Chung *Apr '22 - Dec '22*

Authors: Protick Bhowmick, **Md. Ishtiaq Ashiq**, and Taejoong Chung
- Accepted in Proceedings of the Passive and Active Measurement Conference (PAM '23)

Under the Hood of DANE Mismanagement in SMTP
Supervisor : Dr. Taejoong Chung *Oct '20 - May '21*

Authors: Hyeonmin Lee, **Md. Ishtiaq Ashiq**, Moritz Mller, Roland van Rijswijk-Deij, Taekyoung Ted Kwon, Taejoong Chung

- In Proceedings of the USENIX Security Symposium 2022, Boston, MA, USA

- Contributed to an open-source project (**Mail-in-a-Box**) to automate DANE configuration updates after key rollover

Measurement and Analysis of Automated Certificate Reissuance
Supervisor : Dr. Taejoong Chung *May '20 - Nov '20*

Authors: Olamide Omolola, Richard Roberts, **Md. Ishtiaq Ashiq**, Taejoong Chung, Dave Levin, and Alan Mislove

- In Proceedings of the Passive and Active Measurement Conference (PAM), Virtual, Mar 2021

Domain Flux based DGA Botnet Detection Using Feedforward Neural Network
Supervisor : Dr. Md. Shohrab Hossain *Jan '18 - Jul '19*

Authors: **Md. Ishtiaq Ashiq**, Protick Bhowmick, Md. Shohrab Hossain, and Husnu S. Narman

- In IEEE Military Communications Conference (MILCOM), Norfolk, VA, USA, 2019

Projects

A Study on Adversarial Training: Is adversarial training transferable in the text domain?
Supervisor : Dr. Bimal Viswanath *Mar '21 - Apr '21*

- Conducted an experiment to check AT transferability across adversarial frameworks GitHub Link, Framework: PyTorch

- Fixed a bug on the reference open-source framework [Link]

Experimenting with Web Honeypots: How robust is SNARE-TANNER?
Supervisor : Dr. Angelos Stavrou *Mar '21 - Apr '21*

- Devised and demonstrated vulnerabilities for attackers to bypass detection in SNARE-TANNER framework, details here.

A Comparative Study on Sparse Regression Techniques
Supervisor: Dr. Jyotishka Dutta *Nov '21 - Dec '21*

- Conducted a study to compare performances of different sparse regression techniques like LASSO, Horseshoe, Elastic net, Sparse net, MCP, etc. [Link]

Skills

Languages: Python, Java, C++, C, LaTeX, JavaScript, Assembly (x86), familiar with R
Framework: Django Rest, Tensorflow, PySpark, PyTorch, Node.JS, familiar with Flask
Database Management System: SQL, PostgreSQL, MongoDB
Other: HTML, CSS, Bootstrap, jQuery, Docker, familiar with Android, Redis, Apache, AWS

Awards & Achievements

Awarded **University Merit List Scholarship** for academic performance at BUET

Awarded **Dean's List Scholarship** for academic performance at BUET

Awarded **Dhaka Board SSC & HSC Scholarship** in 2011 & 2013 respectively