Mohammad Ishtiaq Ashiq Khan

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Experience

Graduate Research Assistant **Virginia Tech** **Jan 2021 - Present**
- Conducted research on network security and measurement with an emphasis on **Email**, **DNS**, and **PKI**.
- **Selected Publications**:
  - *You've Got Report: Measurement and Security Implications of DMARC Reporting* in **USENIX Security** 2023. Authors: **Md. Ishtiaq Ashiq**, Weitong Li, Tobias Fiebig, and Taejoong Chung.
    * Analyzed the DMARC Reporting landscape longitudinally and empirically. Proposed a couple of DoS vulnerabilities in 3 major email providers with amplification factor over 1400x leveraging DMARC and TLS-RPT reporting.
  - *Measuring TTL Violation of DNS Resolvers in the Wild* in **PAM** 2023. Authors: Protick Bhowmick, **Md. Ishtiaq Ashiq**, Casey Deccio, and Taejoong Chung.
    * Designed APIs for dynamic resolution of DNS queries for the measurement infrastructure using Docker and DRF.
  - *Under the Hood of DANE Mismanagement in SMTP* in **USENIX Security** 2022. Authors: Hyeonmin Lee, **Md. Ishtiaq Ashiq**, Moritz Muller, Roland van Rijswijk-Deij, Taekyoung Kwon, and Taejoong Chung.
    * Implemented an automated DANE configuration update scheme after key rollover in a popular email provider.

Lecturer **United International University** **Jul 2019 - Dec 2020**
- Taught Network Security, Data Structure, Object-Oriented Programming, etc. undergraduate courses.

Full Stack Software Engineer **InfoSapex Limited** **Nov 2018 - Jul 2019**
- Successfully released a Procurement Management System in production with over 50% contribution.
- 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.

Software Engineer Intern **Dingi Technologies Limited** **Mar 2018 - Aug 2018**
- Developed an interactive website for addressing feedbacks from users of Dingi's native mobile application.

Education

Blacksburg, VA **Jan 2021 - Dec 2025 (Expected)**
- Ph.D. in Computer Science and Applications at **Virginia Tech**

Dhaka, Bangladesh **Jul 2014 - Oct 2018**
- B.Sc. in Computer Science at **Bangladesh University of Engineering and Technology (BUET)**, CGPA: 3.83.

Languages and Technologies

Languages Python, Java, C++, C, JavaScript, HTML, CSS, Assembly (x86), familiar with R and Go
Frameworks and Technologies Django Rest, Tensorflow, Apache Spark, PyTorch, Node.js, Celery, Redis, AWS
DBMS Oracle SQL, PostgreSQL, MongoDB

Selected Projects

- **Revisiting the NXNS Attack** (2022). Developed a scalable technique to measure patches for the attack in local resolvers leveraging a proxy network, [details].
- **Transferability of Adversarial Training in Text Domain** (2021). Conducted a study to check transferability of adversarial training across popular adversarial frameworks. Framework: PyTorch, [Link].
- **DNSSEC Debugger** (2021). Analyzed historical DNSViz data to understand the challenges for DNS administrators while deploying and managing DNSSEC. Presented in **36th DNS-OARC Workshop**, [Link].

Additional Experience and Awards

- **Instructor, Virginia Tech:** Taught Intermediate Software Design course during Summer 2023.
- **Open Source Contributions:** Contributed to 3 open-source projects: Mail-in-a-Box, iRedAPD, and TextAttack.
- Awarded *University Merit List Scholarship*, and *Dean's List Scholarship* during bachelor's.