Iffat Anjum

PhD Candidate, NC State University

✉ ianjum@ncsu.edu | ⌂ ianjum.github.io | 🐦 @iffatanjum11

My research leverages emerging technologies, like Software Defined Networks, to design novel security enhancements for networks and systems, including enterprise on-premises networks, cloud, and 5G infrastructure. My principal methodology seeks to understand and then minimize network and system threats through new architectural design principles. I design and evaluate these systems using a combination of systems building, access control policy logic, and probabilistic model checking.

Education

Department of Computer Science, North Carolina State University *NC, USA*
PHD IN COMPUTER SCIENCE *August, 2018 - present*
- Advisor: Dr. William Enck
- Dissertation Title: Removing Trust within On-Premises Enterprise Networks

Department of Computer Science and Engineering, University of Dhaka *Dhaka, Bangladesh*
MSc IN COMPUTER SCIENCE AND ENGINEERING *2013 - 2015*
- Advisor: Dr. Md. Abdur Razzaque
- Thesis Title: QoS-aware medium access control protocol for coexisting cognitive radio networks

Department of Computer Science and Engineering, University of Dhaka *Dhaka, Bangladesh*
B.Sc. IN COMPUTER SCIENCE AND ENGINEERING *2009 - 2012*
- Advisor: Dr. Md. Abdur Razzaque
- Thesis Title: Traffic Priority and Load Adaptive MAC Protocol for QoS Provisioning in Body Sensor Networks

Professional Experience

2019-now **Research Assistant**, Wolfpack Security and Privacy Research (WSPR) Laboratory, NC State University
2018-2019 **Teaching Assistant**, NC State University
2016-2018 **Lecturer (on study leave)**, Department of Computer Science & Engineering, University of Dhaka
2016-2018 **Undergraduate Research Advisor**, Green Networking Research (GNR) Group, University of Dhaka
2017-2018 **Guest Lecturer**, Department of Computer Science, Green University
2016-2017 **Guest Lecturer**, Department of Computer Science, BRAC University
2014-2016 **Lecturer**, Department of Computer Science, BRAC University
2013-2015 **Graduate Research Assistant**, Green Networking Research (GNR) Group, University of Dhaka
2013-2014 **Junior Software Engineer**, REVE Systems, Dhaka
2011-2013 **Undergraduate Research Assistant**, Green Networking Research (GNR) Group, University of Dhaka

Publications

PUBLISHED

Iffat Anjum, Daniel Kostecki, Ethan Leba, Jessica Sokal, Rajit Bharambe, William Enck, Cristina Nita-Rotaru, and Bradley Reaves, "Removing the Reliance on Perimeters for Security using Network Views", SACMAT '22: Proceedings of the ACM Symposium on Access Control Models and Technologies, June 2022

Iffat Anjum, Mu Zhu, Isaac Polinsky, William Enck, Michael K. Reiter and Munindar Singh, "Role-Based Deception in Enterprise Networks", CODASPY '21: Proceedings of the Eleventh ACM Conference on Data and Application Security and Privacy, April 2021

Iffat Anjum, Mohammad Sujan Miah, Mu Zhu, Nazia Sharmin, Christopher Kiekintveld, William Enck, Munindar P Singh, "Optimizing Vulnerability-Driven Honey Traffic Using Game Theory", AAAI Workshop on Artificial Intelligence for Cyber Security (AICS), 2020

Mahbuba Afrin, Md Abdur Razzaque, **Iffat Anjum**, Mohammad Mehedi Hassan, and Atif Alamri, "Trade-off between User Quality-of-Experience and Service Provider Profit in 5G Cloud Radio Access Network", Sustainability, vol. 9, pp. 2127, 2017

Iffat Anjum, Md Abdur Razzaque, Mohammad Mehedi Hassan, Abdul hameed Alelaiwi, and Sk. Md. Mizanur Rahman, "Quality-of-service-aware weighted-fair medium access control protocol for coexisting cognitive radio networks", EURASIP Journal on Wireless Communications and Networking (2016), vol. 2016, no. 1, pp. 77, 2016

Iffat Anjum, Nazia Alam, Md. Abdur Razzaque, Mohammad Mehedi Hassan, and Atif Alamri, "Traffic Priority and Load Adaptive MAC Protocol for QoS Provisioning in Body Sensor Networks", International Journal of Distributed Sensor Networks, 2013

Najmun Nahar Bhuiyan, Roza Tabassum Ratri, **Iffat Anjum** and Dr. Md. Abdur Razzaque, "Traffic-load Aware Spectrum Allocation in Cloud assisted Cognitive Radio Networks", 2017 IEEE Region 10 Humanitarian Technology Conference.

In Review

Iffat Anjum, Jessica Sokal, Hafiza Ramzah Rehman, Ben Weintraub, Ethan Leba, William Enck, Cristina Nita-Rotaru, Brad Reaves , "MSNetViews: Geographically Distributed Management of Enterprise Network Security Policy"

In Prep

Iffat Anjum, Ben Weintraub, William Enck, Cristina Nita-Rotaru, Brad Reaves, "Security Analysis of Next Generation Access Control"

Ramzah Rehman, **Iffat Anjum**, Ben Weintraub, William Enck, Cristina Nita-Rotaru, Brad Reaves, "Device to Device Least Privilege Access Control Enforcement in 5G User Plane"

Awards & Fellowships

2022	**Best Student Paper**, Proceedings of the 27th ACM on Symposium on Access Control Models and Technologies (SACMAT)
2021	**NCSE CoE Summer Graduate Merit Award**, College of Engineering, NC State University, USA
2019	**RSA Conference Security Scholar**, RSA Conference
2019	**Grad Cohort CRA-W Student Scholarship**, CRA-W
2013	**Dean's Award**, Faculty of Engineering & Technology, University of Dhaka
2015	**University Merit Scholarship, for academic excellence in MSc**, University of Dhaka
2013-2015	**Fellowship and Scholarship for research in ICT Sector**, Ministry of ICT, Bangladesh
2013	**University Merit Scholarship, for academic excellence in BSc**, University of Dhaka
2008	**Award of Excellence in Higher Secondary School Certificate**, Education Ministry of Bangladesh
2008	**Scholarship for Higher Secondary School Certificate**, Bangladesh Bank, Central Bank of Bangladesh
2006	**Award of Excellence in Secondary School Certificate**, Education Ministry of Bangladesh
2006	**Scholarship for Secondary School Certificate**, Bangladesh Bank, Central Bank of Bangladesh

Mentoring

2020-2022	**Hafiza Ramzah Rehman**, PhD student, WSPR Lab, Department of CS, NC State University
2019-2020	**Rajit Bharambe**, MSc student, WSPR Lab, Department of CS, NC State University
2020-2021	**Jessica Sokal**, MSc student, Computer Science, Northeastern University
2020-2021	**Ethan Leba**, Undergraduate student, Computer Science, Northeastern University
2019-2020	**Daniel Kostecki**, MSc student, Computer Science, Northeastern University
2015-2017	**Mahbuba Afrin**, MSc student, GNR Lab, Dept. of CSE, University of Dhaka

Undergraduate Thesis Advising

2016-2018	**Roza Tabassum Ratri**, GNR Lab, Dept. of CSE, University of Dhaka
2016-2018	**Najmun Nahar Bhuiyan**, GNR Lab, Dept. of CSE, University of Dhaka
2016-2018	**Jargis Ahmed**, GNR Lab, Dept. of CSE, University of Dhaka
2016-2018	**Md. Mahir Ashhab**, GNR Lab, Dept. of CSE, University of Dhaka
2014-2016	**Priyanka Sarkar**, Dept. of CSE, BRAC University
2014-2016	**Manik Moni Barua**, Dept. of CSE, BRAC University
2014-2016	**Md. Faisal Arifin** , Dept. of CSE, BRAC University

Teaching Experience

TEACHING ASSISTANT

NC State University. Course Titles: Software Development Fundamentals, C and Software Tools, Computer and Network Security.

University of Dhaka. Course Titles: Introduction to Programming Language, Algorithms, Data and Telecommunication Systems, Digital Logic Design.

BRAC University. Course Titles: Data Structures, Algorithms, Digital Logic Design, Microprocessors, Artificial Intelligence, and Database Systems.

INSTRUCTOR ON RECORD

University of Dhaka. Course Titles: Compiler Design and Construction, Computer Architecture and Organization.

BRAC University. Course Titles: Compiler Design and Construction, Introduction to Computer Science.

GUEST LECTURER

BRAC University. Course Titles: Compiler Design and Construction.

Green University. Course Titles: Compiler Design and Construction, Introduction to Computer Networks.

Outreach & Professional Development

2023	**Team Leader of Student Volunteers**, Doctoral Recruiting Day, NC State University
2022	**Reviewer**, ACM Transactions on Privacy and Security
2022	**Participant**, ACM Conference on Computer and Communications Security (CCS), LA
2022	**Participant**, 31st USENIX Security Symposium, Bostob, MA
2022-2023	**Participant**, Reflective Educational Design (RED) Inclusive Teaching Certification, NCSU
2022	**Student Volunteer**, North Carolina Cybersecurity Symposium, Raleigh, NC
2022	**Student Volunteer**, Secure and Trustworthy CyberSpace Principal Investigators' Meeting (SaTC PI Meeting), Washington, D.C.
2021	**Participant**, Network and Distributed System Security Symposium (virtual)
2020	**Participant**, Network and Distributed System Security Symposium (virtual)
2019	**Student Participant**, MURI Cyberdeception Review Meeting, Los Angeles, CA
2018	**Conductor**, ICT (Internet and Communication Technologies) workshop for High School Teachers, National University, Bangladesh
2018	**Committee Member**, IQAC cell which deals with governance, facilities, recruitment and staff development, Dept. of CSE, University of Dhaka
2017	**Member**, Purchase committee, Dept. of CSE, University of Dhaka
2017, 2018	**Representative**, Central Admission Examination, University of Dhaka
2016, 2017	**Member**, Internal Exam and Result Coordination Committee, CSE, University of Dhaka
2016	**Participant**, Workshop on Teaching Methods & Techniques, University of Dhaka
2016	**Arranged and volunteered**, "1st Cleaning Campaign", Dept. of CSE, University of Dhaka

References

William Enck, Professor
Department of Computer Science,
North Carolina State University, NC, USA
whenck@ncsu.edu

Brad Reaves, Assistant Professor,
Department of Computer Science,
North Carolina State University, NC, USA
bgreaves@ncsu.edu

Michael Reiter, James B. Duke Distinguished Professor
Departments of Computer Science,
Electrical & Computer Engineering,
Duke University, NS, USA
michael.reiter@duke.edu

Cristina Nita-Rotaru, Professor
Khoury College of Computer Sciences
Northeastern University, MA, USA
c.nitarotaru@northeastern.edu