Hasan Iqbal

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Education

Ph.D. Candidate, Computer Science and Engineering 2018 - 2024 (Expected)
University of Connecticut (UConn), Storrs, CT
Dissertation: High-dimensional Quantum Key Distribution: New Protocolos and Analysis.
Advisor: Dr. Walter O. Krawec.

MS, Computer Science 2015 - 2017
University of Illinois at Chicago (UIC), Chicago, IL

BS, Information Technology 2009 - 2013
IIT, University of Dhaka, Dhaka, Bangladesh

Experience

Research Assistant, UConn 2018 - Present

Development and analysis of new high-dimensional quantum key distribution (HD-QKD) protocols with a focus on resource minimization to help in practical implementations.

Teaching Assistant, UConn 2018 - Present

Cybersecurity: Designed assignments, conducted and graded labs, and held office hours.
Programming Languages: Graded homework, exams, and held office hours.

Teaching Assistant, UIC 2015 - 2017

C/C++, Matlab: Conducted labs, reinforced lessons, and held office hours for a large student population. Received 4.3/5 in student ratings.

Publications

1. Analysis of a High-Dimensional Extended B92 Protocol. H. Iqbal and W.O. Krawec. Quantum Information Processing 20 (10) 344, 2021.
2. High-Dimensional Semi-Quantum Cryptography. H. Iqbal and W.O. Krawec. IEEE Transactions on Quantum Engineering, vol. 1, pp. 1-17, 2020.
3. Semi-quantum Cryptography. H. Iqbal and W.O. Krawec. Quantum Information Processing 19 (3) 97, 2020.
4. From Classical to Semi-Quantum Secure Communication. A. Gagliano, W.O. Krawec, and H. Iqbal. IEEE ISIT 2019.

Preprints

1. New Security Proof of a Restricted High-Dimensional QKD Protocol. H. Iqbal and W.O. Krawec. arXiv:2307.09560.

Awards

Conference participation award, Graduate School, UConn	July 2023
Summer dissertation fellowship, Graduate School, UConn	April 2023
Synchrony Financial fellowship, CSE, UConn	2021 - 2022, 2023
Pre-doctoral fellowship award, CSE, UConn	May 2023/22/21/20

Presentations and Posters

1. New Security Proof of HD-3-State-BB84 Protocol, Quantum Optics Seminar, NIST (Online). October 2023
2. New Security Proof of HD-3-State-BB84 Protocol, QCrypt poster, UMaryland. August 2023
3. HD-B92 Protocol, SOE poster competition, UConn. April 2021
4. HD-Semi-quantum Key Distribution, CSE Security Seminar, UConn. November 2020
5. Fully Device-independent QKD, Quantum Network Seminar, UMass/CQN. July 2020
6. HD-Semi-quantum Key Distribution, SOE poster competition, UConn. March 2020

Professional Services

1. Served as reviewer for IEEE/ACM Transactions on Networking.

University Services

1. Volunteered for showcasing research to the undergraduate students. October 2023
2. Volunteered as a student leader in welcoming new engineering graduate students. August 2022
3. Served as an Orientation Representative for international students. Dec '19, Aug '19
4. Volunteered for the School of Engineering research showcase. March 2019

References

Dr. Walter O. Krawec
Associate Professor, Computer Science and Engineering, University of Connecticut
walter.krawec@uconn.edu, (860) 486-5523

Dr. Bing Wang
Professor, Computer Science and Engineering, University of Connecticut
bing@uconn.edu, (860) 486-0582

Dr. Alexander Russell
Professor, Computer Science and Engineering, University of Connecticut
acr@uconn.edu, (860) 486-4290