

# Hasan Iqbal

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## Education

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| <b>PhD</b> , Computer Science and Engineering<br><b>University of Connecticut (UConn)</b> , Storrs, CT<br>Dissertation: High-dimensional Quantum Key Distribution: New Protocols and Analysis.<br>Committee: Dr. Walter O. Krawec (chair), Dr. Bing Wang, Dr. Alexander Russell | 2018 - 2024 |
| <b>MS</b> , Computer Science<br><b>University of Illinois at Chicago (UIC)</b> , Chicago, IL  | 2015 - 2017 |
| <b>BS</b> , Information Technology<br><b>IIT, University of Dhaka</b> , Dhaka, Bangladesh   | 2009 - 2013 |

## Professional Experience

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| <b>University of Wyoming</b> , Assistant professor of EECS         | 2024 - Present |
| <b>University of Connecticut</b> , Research and teaching assistant | 2018 - 2024    |
| <b>University of Illinois at Chicago</b> , Teaching assistant      | 2015 - 2017    |

## Publications

1. New Security Proof of a Restricted High-Dimensional QKD Protocol. H. Iqbal and W.O. Krawec. IEEE ISIT 2024.
2. Analysis of a High-Dimensional Extended B92 Protocol. H. Iqbal and W.O. Krawec. Quantum Information Processing 20 (10) 344, 2021.
3. High-Dimensional Semi-Quantum Cryptography. H. Iqbal and W.O. Krawec. IEEE Transactions on Quantum Engineering, vol. 1, pp. 1-17, 2020.
4. Semi-quantum Cryptography. H. Iqbal and W.O. Krawec. Quantum Information Processing 19 (3) 97, 2020.
5. From Classical to Semi-Quantum Secure Communication. A. Gagliano, W.O. Krawec, and H. Iqbal. IEEE ISIT 2019.

## Teaching

### University of Wyoming

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|---|-------------|
| 1. COSC 4200 - Computability and Complexity       | Fall 2024   |
| 2. EE 5885 - Introduction to Quantum Cryptography | Spring 2025 |

## Professional Services

Served as a reviewer for the following journals:

1. Quantum Information Processing
2. EPJ Quantum Technology
3. IEEE Internet of Things
4. IEEE/ACM Transactions on Networking

## University Services

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|--|------------------|
| 1. Volunteered for showcasing research to the undergraduate students.  | October 2023     |
| 2. Volunteered 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       |

## Presentations and Posters

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| 1. New Security Proof of HD-3-State-BB84 Protocol, Quantum Optics Seminar, NIST (Online).<br>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    |

## Awards

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|---|----------------------|
| 1. Conference participation award, Graduate School, UConn | July 2023            |
| 2. Summer dissertation fellowship, Graduate School, UConn | April 2023           |
| 3. Synchrony Financial fellowship, CSE, UConn             | 2021 - 2022, 2023    |
| 4. Pre-doctoral fellowship award, CSE, UConn              | May 2024/23/22/21/20 |

## 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

### **Dr. Sanguthevar Rajasekaran**

Professor, Computer Science and Engineering, University of Connecticut  
sanguthevar.rajasekaran@uconn.edu, (860) 486-2428