

Md Mehdi Hassan

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EXPERIMENTAL PHYSICIST IN QUANTUM NETWORKING & PHOTONICS SYSTEMS

TECHNICAL SKILLS

INSTRUMENT	<ul style="list-style-type: none">Single Photon Detectors (SNSPD, SAPD)Intensity and Phase ModulatorsArbitrary Waveform Generators (AWG)White Rabbit SwitchRubidium Vapor Cell (Vacuum Squeezing)Time-Correlated Single Photon Counter (TCSPC)Communication Band Lasers (IR, Class 3B)Biphoton Sources (1570 nm & 810 nm)Active/Automated Polarization Controller (APC)Metropolitan Quantum Network Infrastructure (3-node)
PROGRAMMING	Python, C++, LaTeX, Git, Docker
APPLICATION	Blender, Inkscape, GIMP, Illustrator, Photoshop, MS Word, MS Excel, MS PowerPoint
OS	Linux, Windows
COMMUNICATION	English (fluent), Bengali (primary)

PROFESSIONAL EXPERIENCE

RESEARCH ASSISTANT (08/2022 - PRESENT)	University of Tennessee, Knoxville; Department of Physics & Astronomy Supervisor: Professor George Siopsis Group: Quantum Entanglement Science and Technology (QUEST) Section: Quantum Networking (Experiment) Topic: <ul style="list-style-type: none">Fiber and free space opticsHong Ou Mandel Visibility CharacterizationEntanglement Distribution in Practical Quantum NetworkBB84 (Quantum Key Distribution Protocol)Measurement Device Independent QKD
INTERN (05/2025 - 08/2025)	Quantum Center, University of Tennessee at Chattanooga Supervisor: Professor Tian Li Group: Quantum Networking and Communications, Quantum Sensing Lab Topic: <ul style="list-style-type: none">Four-photon GHZ and NOON state preparationSecure Quantum Clock SynchronizationSqueezed Light Coupling from Free-Space to FiberNetwork Time SynchronizationNetwork Data AnalysisFidelity Measurement
TEACHING ASSISTANT (08/2019 - 12/2022)	University of Tennessee, Knoxville, DEPARTMENT OF PHYSICS & ASTRONOMY. Conducted undergraduate physics lab courses including Optics, Electricity & Magnetism, and Mechanics over: <ul style="list-style-type: none">7 semesters15 lab sections2,200+ cumulative teaching hours. Responsibilities included: Lab instruction, Grading, and Individualized student support.
LAB OFFICER (01/2018 – 06/2019)	North South University (Bangladesh), DEPARTMENT OF MATHEMATICS AND PHYSICS Taught introductory undergraduate lab courses in Electricity & Magnetism, Mechanics, and Electronics across: <ul style="list-style-type: none">4 semesters14 lab sections1,300+ cumulative teaching hours Responsibilities included: Lab instruction, Grading, and Maintenance of lab equipment
RESEARCH ASSISTANT (10/2017 - 08/2018)	University of Dhaka, Department of Theoretical Physics Supervisor: Professor Golam Mohammad Bhuiyan Topic: Theory of Melting Point for Three FCC Elements: Al, Cu, Ni

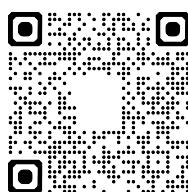
CONFERENCE PRESENTATIONS

PROFESSIONAL TALK	<ul style="list-style-type: none">IonQ- Quantum Immersion Day (Knoxville, TN, 2025)IEEE Quantum Week (Bellevue, WA, 2023)QuaNTRASE Seminar Series (Knoxville, TN, 2023)
POSTER	<ul style="list-style-type: none">QCUF Workshop (Oak Ridge National Lab, 2025)CLEO Conference (Charlotte, NC, 2024)NSF Research Traineeship (Tempe, AZ, 2023)Quantum Technology Workshop (UT Chattanooga, TN, 2025)Southeast Quantum Workshop (UT Knoxville, TN, 2024)NSF Research Traineeship (Blacksburg, VA, 2022)

ACADEMIC BACKGROUND

08/2019 - PRESENT ¹	DOCTOR OF PHILOSOPHY IN PHYSICS Department of Physics & Astronomy University of Tennessee, Knoxville, TN 37996, USA
12/2024 (Concurrent)	MASTER OF SCIENCE WITH A MAJOR IN PHYSICS Department of Physics & Astronomy University of Tennessee, Knoxville, TN 37996, USA
02/2016 - 08/2018	MASTER OF SCIENCE IN THEORETICAL PHYSICS Department of Theoretical Physics University of Dhaka, Dhaka-1000, Bangladesh
01/2011 - 11/2015	BACHELOR OF SCIENCE IN PHYSICS Department of Physics University of Dhaka, Dhaka-1000, Bangladesh

PUBLICATIONS



bit.ly/mmh-utk

12/2025	M. Hassan, J. Humberd, MJU Haq, N. Crum <i>et al.</i> : Distributed $g^{(2)}$ Retrieval with Atomic Clocks: Eliminating Conventional Sync Protocols [submitted to CLEO, 2026]
12/2025	J. Humberd, N. Crum, MJU Haq, M. Hassan <i>et al.</i> : Distributed Time Tagging of Correlated Photons with White Rabbit Synchronized Event Timers [submitted to CLEO, 2026]
01/2025	N. Crum, M. Hassan and G. Siopsis: Practical Quantum Clock Synchronization Using Weak Coherent Pulses
09/2025	K. Reaz, M. Hassan, J. Humberd, M. Boone <i>et al.</i> : Polarization-Controlled Dual-State Distribution of Bell and NOON Entanglement Over a Metro-Scale Commercial Quantum Network
01/2025	N. Crum, M. Hassan, A. Green and G. Siopsis: Mode Distinguishability in Multi-photon Interference
05/2024	A. Green, M. Hassan, N. Crum, K. Reaz, and G. Siopsis: Two-Crystal Configuration for Frequency-Converted Spontaneous Parametric Down Conversion
05/2024	N. Crum, K. Reaz, M. Hassan, A. Green, and G. Siopsis: Clock Synchronization with Weak Coherent Pulses
11/2023	K. Reaz, M. Hassan, A. Green, N. Crum, and G. Siopsis: Experimental decoy state asymmetric MDI-QKD over a turbulent high-loss channel
09/2023	M. Hassan, K. Reaz, A. Green, N. Crum, and G. Siopsis: Experimental Free-Space Quantum Key Distribution Over a Turbulent High-Loss Channel

HONORS & AWARD

CHAMPION	Three Minute Thesis (3MT) Competition, UT Knoxville, [2025]
GRADUATE FELLOWSHIP	Department of Physics & Astronomy, The University of Tennessee, Knoxville [2019-2024]
SELECTED PARTICIPANT	US Quantum Information Science Summer School [2024]
BEST PAPER AWARD	IEEE Quantum Week 2023, Quantum Network & Communication (3rd Place) [2023]

¹Anticipated graduation: Spring, 2026

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