

# Md. Raisul Islam Rifat

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Chittagong, Bangladesh

## EDUCATION

### • Bachelor of Science in Electrical and Electronic Engineering

July 2025

Chittagong, Bangladesh

Chittagong University of Engineering and Technology

- CGPA: 3.48 / 4.00

### • Higher Secondary Certificate

May 2019

Chittagong, Bangladesh

Chittagong College

- GPA: 5.00 / 5.00

### • Secondary School Certificate

March 2017

Chittagong, Bangladesh

Nasirabad Govt. High School

- GPA: 5.00 / 5.00

## PUBLICATIONS

C=CONFERENCE, J=JOURNAL

### [J.1] QSAC: Quantum-assisted Secure Audio Communication using Quantum Entanglement, Audio Steganography, and Classical Encryption. (Article reference: [JESTCH\\_102167](#))

*Md. Raisul Islam Rifat, Md. Mizanur Rahman, Md. Abdul Kader Nayon, Md Shawmoon Azad and M.R.C. Mahdy.*

- Designed a novel scheme of secure audio communication by incorporating E-91 Quantum Key Distribution with SHA-3 Hashing Algorithm, ChaCha20-Poly1305 AEAD and LSB steganography.

### [C.1] Design of a Negative Refractive Index THz Metamaterial Biosensor For Cancer Cell Detection.

(Accepted and presented at [EICT, 2025](#). Awaiting publication in IEEE Xplore.)

*Md. Abdul Kader Nayon, Md. Raisul Islam Rifat, Nipa Dhar.*

- Designed a non-invasive Biosensor capable of detecting Cancer Cells by utilizing the Negative Refractive Index of Double Negative Metamaterials in the THz region.

## RESEARCH EXPERIENCE

### • Familiarization with Quantum Computing, Quantum Key Distribution & Post-quantum Cryptography.

2024-2025

*Supervisor: M.R.C Mahdi, Department of Electrical and Computer Engineering, North South University, Bashundhara, Dhaka*



- Learned about Quantum Matrix Mechanics and implemented BB84, B92 and E91 Quantum Key Distribution protocols as well as Quantum-safe Cryptography schemes such as Lattice-based cryptography using QISKit.

### • Design of a Negative Refractive Index THz Metamaterial Biosensor for Cancer Cell Detection

2024-2025

*Supervisor: Miss Nipa Dhar, Assistant Professor, Chittagong University of Engineering and Technology*



- Learned about the Negative Refractive Index property of metamaterials and attempted to implement this property in THz frequency range using CST.

## PROJECTS

### • Capacitance Meter Design Project: Made a functioning Capacitance Meter using PIC 16F628A.

2023

*Tools: MikroC Pro, PICKit, Proteus*



- Developed a functioning Capacitance Meter using microcontroller for measuring capacitance in the range of 1nF – 1μF through simulation and PCB implementation.

### • Machine Design Project: Designed a 470 kVA Distribution Transformer.

2023

*Tools: AutoCAD Electrical, MATLAB*



- Created Transformer design based on the required parameters using AutoCAD and MATLAB.

### • Heart Rate Sensor Design Project: Made a functioning Heart Beat Sensor using Arduino Uno vR3.

2022

*Tools: Arduino, C++, Proteus*



- Developed a functioning Heart Rate Sensor using Arduino for measuring heartbeat from fingertip.

## INTERNSHIP EXPERIENCE

### • Bangladesh Telecommunications Company Ltd. (BTCL)

24th November, 2024 - 12th December, 2024

*BTCL Regional Exchange, Nandakanon, Chattogram*



- Participated in a 15-day long internship training program hosted by BTCL as part of the academic curriculum.

## SKILLS

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- **Programming Languages:** C, C++, C#, Python, Assembly, Verilog.
- **Quantum SDKs:** QISKit, QRISPr.
- **Data Science & Machine Learning:** NumPy, Pandas, Matplotlib, Scikit-Learn, TensorFlow, Keras.
- **VLSI Design Tools:** Cadence, LTSpice, ModelSim.
- **Operating System:** Arch Linux, Ubuntu, Debian, Linux Mint, Windows.
- **Other Tools & Technologies:** MATLAB, Multisim.

## CERTIFICATION

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- **IQM Quantum School Certificate** 2nd December, 2025– 4th December, 2025  
IQM Quantum Computers 
  - Participated in a 3-day long virtual **IQM Quantum School** arranged by IQM Quantum Computers.
- **Digital Design for Industrial Control** 2024-2025  
Enhancing Digital Government and Economy (EDGE) Project of Bangladesh Computer Council, ICT Division 
  - Participated in and completed the **Digital Design for Industrial Control** (EDGE –1013) course hosted in CUET.
- **Networking Basics** 2025  
Cisco Networking Academy 
  - Participated in and completed the **Networking Basics** course offered by the Cisco Networking Academy.
- **Introduction to Cybersecurity** 2025  
Cisco Networking Academy 
  - Participated in and completed the **Introduction to Cybersecurity** course offered by the Cisco Networking Academy.
- **Introduction to Packet Tracer** 2025  
Cisco Networking Academy 
  - Participated in and completed the **Introduction to Packet Tracer** course offered by the Cisco Networking Academy.

## AWARDS

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- **Education Board Scholarship** Chittagong, Bangladesh  
Board of Intermediate & Secondary Education, Chattogram
  - Received General Grade Scholarship in SSC (2017-2019)
  - Received General Grade Scholarship in HSC (2019-Present)

## LANGUAGE PROFICIENCY

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- **English:** Proficient
- **German:** CEFR level: A1
- **Bengali:** Native Language

## REFERENCES

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Dr. Mahdy Rahman Chowdhury  
Associate Professor, ECE Department,  
North south Univarsity, Dhaka  
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