

# Md. Raisul Islam Rifat

+880-1832-120454 | rifat20011503@gmail.com

skywalker478.github.io | skywalker478 | skywalker478 | 0009-0003-6247-1924

Chittagong, Bangladesh

## EDUCATION

- Bachelor of Science in Electrical and Electronic Engineering** July 2025  
Chittagong University of Engineering and Technology Chittagong, Bangladesh  
◦ CGPA: 3.48/4.00
- Higher Secondary Certificate** May 2019  
Chittagong College Chittagong, Bangladesh  
◦ GPA: 5.00/5.00
- Secondary School Certificate** March 2017  
Nasirabad Govt. High School Chittagong, Bangladesh  
◦ 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  $1nF - 1\mu F$  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, Nandankanon, 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, QRISP.
- **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 University, Dhaka  
**Contact:** [mahdybuett@gmail.com](mailto:mahdybuett@gmail.com) | [Google Scholar](#)