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, P=Patent, S=In Submission, T=Thesis

[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, awaiting publication in EICT, 2025.)
Abdul Kader Nayon, ***Md. Raisul Islam Rifat****, Nipa Dhar.*
- Designed a non-invavisve 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 [GitHub]
  ◦ 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, Chittangong University of Engineering and Technology [Web]
  ◦ 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 [GitHub]
  ◦ 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 [GitHub]
  ◦ 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 [GitHub]
  ◦ 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 [Web]
  ◦ Participated in a 15-day long internship training program hosted by BTCL as part of the academic curriculum.

Laboratory Experience

- **University Lab Projects** *2022-2024*
  Chittagong University of Engineering and Technology [GitHub]
  - **Digital Logic Design:** Worked on various lab-based digital logic design projects, including creating combinational and sequential circuits using Cadence Virtuoso.
  - **Analog Circuits:** Conducted analysis and testing of analog circuits in lab settings, applying theoretical knowledge to practical implementations.

Skills

- **Programming Languages:** C, C++, C#, Python, Assembly, Verilog.
- **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

- **Digital Design for Industrial Control** *2024-2025*
  Enhancing Digital Government and Economy (EDGE) Project of Bangladesh Computer Council, ICT Division [Web]
  - Participated in and completed the **Digital Design for Industrial Control** (EDGE −1013) course hosted in CUET.
- **Networking Basics** *2025*
  Cisco Networking Academy [Web]
  - Participated in and completed the **Networking Basics** course offered by the Cisco Networking Academy.
- **Introduction to Cybersecurity** *2025*
  Cisco Networking Academy [Web]
  - Participated in and completed the **Introduction to Cybersecurity** course offered by the Cisco Networking Academy.
- **Introduction to Packet Tracer** *2025*
  Cisco Networking Academy [Web]
  - Participated in and completed the **Introduction to Packet Tracer** course offered by the Cisco Networking Academy.

Awards

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

References

Dr. Mahdy Rahman Chowdhury
Associate Professor, ECE Department,
North south University, Dhaka
Contact: mahdybuet@gmail.com | Google Scholar