

Tasnimul Hoque Rafi

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About Me

I am a prospective Post-Graduate student having completed B.Sc. in Electrical and Electronics Engineering (EEE) from the Bangladesh University of Engineering and Technology (BUET), specializing in Communication and Signal Processing. My research interest focuses on Robotics and Automation, Computer Vision, UAVs, and Wireless Communication Systems. I have developed a strong expertise in my areas of interest through hands-on experience with numerous relevant projects.

Having developed a solid foundation in both theoretical and practical aspects of engineering, I am eager to apply my knowledge and skills to innovative research projects.

Education

Undergraduate

Apr 2019 - Jul 2024

[Bangladesh University of Engineering and Technology \(BUET\).](#)

B.Sc. in Electrical and Electronic Engineering (EEE)

Result: **CGPA: /4**

Relevant Courses: Control Systems, Power Electronics, Digital Electronics, Microprocessors and Embedded Systems, Robotics and Automation, Digital Signal Processing, Microwave Engineering, Optical Communication, Radar and Satellite Communication, Wireless Communication

Higher Secondary Certificate

Jun 2016 - May 2018

[Comilla Victoria Government College.](#)

Result: **GPA: 5/5**

Secondary School Certificate

Jan 2011 - Apr 2016

[Comilla Modern High School.](#)

Result: **GPA: 5/5**

Research

Undergraduate Thesis:

Title: "Virtual Zone Based Traffic Monitoring and Driver Assistance"

Supervisor: Dr. S.M. Mahbubur Rahman, Professor, Department of EEE, BUET. [🌐 Link](#)

Summary: Worked on Computer Vision Based Autonomous Traffic Monitoring on the roads and highways of Bangladesh using AI models from video footage. It includes Traffic sign and vehicles classification, Number plate recognition, Speed Estimation, Zone based vehicles counting, Zone based collision avoidance alert, Driver's drowsiness Alert. [📺 YouTube](#) | [🌐 GitHub](#)

Projects

1. Medicine/Relief Delivery Drone for Flood Affected Region [📺 YouTube](#) |
2. The Aerial Weather Station (Weather Monitoring Drone) [📺 YouTube](#) | [🌐 GitHub](#)
3. Computer Vision Based Gesture Controlled Obstacle Avoiding BOT [📺 YouTube](#) | [🌐 GitHub](#)
4. Gesture Controlled Robotic Manipulator (2 DoF) Using Computer Vision [📺 YouTube](#) | [🌐 GitHub](#)
5. Computer Vision Based Speed Control of DC Fan Using Hand Gesture [📺 YouTube](#) | [🌐 GitHub](#)

6. Computer Vision Based Electric Load Control Using Hand Gesture [▶ YouTube](#) | [🔗 GitHub](#)
7. Electric Load Control Using Virtual Buttons [▶ YouTube](#) | [🔗 GitHub](#)
8. Face Recognition Based Smart Door Lock [▶ YouTube](#) | [🔗 GitHub](#)
9. QR Code Based Smart Door Lock [▶ YouTube](#) | [🔗 GitHub](#)
10. Face Recognition Based Smart Attendance System [▶ YouTube](#) | [🔗 GitHub](#)
11. QR Code Based Smart Attendance System [▶ YouTube](#) | [🔗 GitHub](#)
12. Face ID Based Smart Door Bell with Secured Door Lock [▶ YouTube](#) | [🔗 GitHub](#)
13. Eye Blink Based Secured Door Lock [▶ YouTube](#) | [🔗 GitHub](#)
14. Drowsiness and Yawn Alert for Driver Assistance Using Computer Vision [▶ YouTube](#) | [🔗 GitHub](#)
15. Voice Controlled Obstacle Avoiding BOT [▶ YouTube](#) | [🔗 GitHub](#)
16. IoT Based Patient Monitoring System [▶ YouTube](#) | [🔗 GitHub](#)
17. IoT Based Weather Station [▶ YouTube](#) | [🔗 GitHub](#)
18. IoT Based Smart Door Lock Using Password/OTP/RFID [▶ YouTube](#) | [🔗 GitHub](#)
19. Data Transmission Using Light (LiFi) with Morse Code Encoding [▶ YouTube](#) | [🔗 GitHub](#)

Skills

- **Microcontrollers:** Arduino, ESP, STM, FPGA, Raspberry Pi
- **Programming Languages:** Python, C/C++, VHDL, Matlab
- **Simulation:** PSpice, PSAF, AutoCAD, Matlab/Simulink, Quartus, Keil, Proteus, SITL, ROS
- **Document Preparation:** Overleaf (LaTeX), Microsoft Word/PowerPoint/Excel
- **Languages:** English (Professional Fluency), French (Early B1), Italian (A2), Bengali (Native)

Internship

Organisation: Grameenphone Ltd (Telecommunication Service Provider) **Nov 2023**
Summary: Learned the deployment of BTS(Base Transceiver Station) and types of antennas like GSM and Microwave including the challenges and power management. Explored the core cellular communication technologies like GSM,CDMA,GPRS,EDGE,3G,4G and LTE.

Volunteering Activities

- [1] Conducted hands-on workshops on Microcontrollers and UAVs for fellow juniors.
- [2] Taught higher secondary Physics and Math to fellow juniors, reinforcing their fundamental concepts.
- [3] Volunteered in the competitions held by the Robotics Club and helped coordinate cultural events.

References

1. Dr. S.M. Mahbubur Rahman Thesis Supervisor, Professor, BUET Contact: +8801724588513 Email: mahbubur@eee.buet.ac.bd 🌐 Link	2. Dr. Mohammad Jahangir Alam Undergraduate Advisor, Professor, BUET Contact: +8801911356905 Email: mjalam@eee.buet.ac.bd 🌐 Link
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