

NAHID AHMED SHIHAB

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EDUCATION

BRAC University Bachelor of Engineering Major in Electrical and Electronic Engineering Cumulative GPA: 3.35/4.0; Relevant Coursework: Power systems, Power electronics, robotics, machine learning, image processing, Energy conversion.	Dhaka, Bangladesh October 2024
Aspire Institute Inc. Aspire Leaders Program (ALP'24), Cohort-01 Fully funded professional and leadership development program(remote)	Massachusetts, US Jan 2024 - Apr 2024

WORK EXPERIENCE

Vendy LTD. (Vending Machine manufacturer Company) Junior Engineer, IoT and Electronics, Part-time <ul style="list-style-type: none">Developed IoT-based control systems for vending machines, improving operational efficiency.Designed and implemented PCBs and circuits, reducing production time and enhancing system reliability.Implemented Sqlite3 database system into ESP based PLCs. Which allowed the company to move to fully offline machines.	Dhaka, Bangladesh Jun 2024 – Present
Student Tutor, Department of EEE, BARC University EEE282 & EEE383 <ul style="list-style-type: none">EEE282 - Numerical Techniques & EEE383 - Electronic System DesignTaught student Printed Circuit Board (PCB) using Altium, and Project management.Taught Student about different numerical techniques, and use of MATLAB	Dhaka, Bangladesh May 2024 – Sept 2024
Zeroozen (Full-stack energy company) Hardware Engineer, Intern <ul style="list-style-type: none">Designed and developed PCBs using Altium, KiCAD, and EasyEDA, improving hardware design workflows.Integrated IoT systems with Thingspeak, streamlining data monitoring and control processes.Programmed firmware for microcontrollers, enhancing the functionality of EV systems.	Dhaka, Bangladesh Oct 2023 – Feb 2024

RESEARCH PUBLICATIONS

- Efficiency Analysis of LLC Resonant Converter with 7kW & 10kW Loads for 3-Phase Distribution Using Transient, Power, and Monte Carlo Methods: Simulation-Based Approach** [Accepted for presentation at the 13th ICECE 2024].
- Catalyzing Space Technology Development in Bangladesh: A Space System Engineering Training Initiative**, IAF, IAC-24, 31st IAA Symposium on Small Satellite Missions.
- Transformation and Future Trends of Smart Grid Using Machine Learning and Deep Learning**, International Journal of Applied Power Engineering (IJAPE), Indexed in Scopus and Elsevier, Vol. 13, No. 3. September 2024
- Sizing an Off-Grid Photovoltaic System for a Regular East African Residence**, 6th EICT'23, IEEE Explore, November 2023.

THESIS/FYDP (Final year Design Project)

- Meat Quality Grading and Contamination Identification to Avoid Foodborne Infection and Food Quality Control.**
 - Developed a smart meat quality grading and contamination detection system using IoT sensors and machine learning algorithms.
 - Developed flutter based mobile application for real-time monitoring of meat quality and environmental factors, ensuring accurate data collection.
 - Embedded C programmed microcontroller for data processing and communication between sensors and the web interface.
 - Applied machine learning to classify meat quality and contamination levels, enhancing food safety and quality control.
 - Designed and automated a vacuum chamber, ensuring precise environmental control for accurate testing results.

Language

- **IELTS Band Score: 7.0**

Case Study

- **Nuclear Disaster: The Chernobyl Case Study** April 2024
 - Conducted as part of academic coursework in Power Plant Engineering.
 - Explored the causes, impacts, and lessons learned from the Chernobyl nuclear disaster.

PROJECTS

1. **BRACU Duburi – Underwater Autonomous Vehicle** Sep 2020 - Dec 2023
 - Worked as Senior member of Mechanical and Electronics sub-team.
 - Contributed to electrical and mechanical designs in a multidisciplinary team, worked with machine vision to allow real-time camera feed to Unreal engine.
 - Runner-up in RoboSub 2023, California, USA, as Bangladesh's first underwater autonomous vehicle project.
2. **Nano-Satellite Training Kit – DIPTO** Sep 2023 - Present
 - Working as the Team Lead for this project
 - Built a nano-satellite model for educational purposes, featuring telemetry, digipeater, and weather forecasting capabilities.
 - Gained recognition for contributing to STEAM education and satellite technology awareness.
3. **Steam Training Kit – ICT-KIT01** Feb 2024 - Present
 - Contributing as the Team Lead for this project
 - Designed an interactive kit to promote hands-on learning in science, technology, engineering, arts, and mathematics (STEAM).
 - Developed tools and resources to make STEM education more accessible.
4. **Smart Surveillance Rover – MechaRank**
5. **Autonomous Drone & Unmanned Ground Vehicle (UGV), A project under LaSSET (Laboratory of Space System Engineering & Technology), BRAC University** Jan 2023 - Present
 - Created an IoT-based rover with real-time monitoring capabilities for surveillance applications.
 - Integrated sensor data with local and cloud servers for enhanced accessibility and reliability.
6. **Cognysis – Personal Voice Assistance** Mar 2022 - Present
 - Working as the Sub-Lead of Electronics and Sensory integration Team.
 - Built autonomous navigation systems for drones and UGVs for versatile real-world applications.
 - Enhanced sensory and power systems for long range missions.
7. **First-person view autonomous drone – Racing Drone** Apr 2023 - Present
 - Automated Speech Recognition (ASR) systems for converting auditory signals into textual data.
 - Natural Language Processing (NLP) pipelines for semantic parsing and context inference.
 - Text-to-Speech (TTS) synthesis leveraging deep neural networks for lifelike vocal output.
 - Ontology-based knowledge representation for structured data retrieval and reasoning.
 - Application Programming Interface (API) orchestration for seamless integration with external services.
 - Voice activity detection (VAD) algorithms for precise start and stop signal recognition
8. **ROBOTIC ARM (3DoF)** Jan 2021 – Sep 2021
 - Working as the Lead of Electronics & Machine vision.
 - Designed and tested a highly agile drone capable of complex maneuvers and high-speed operations.
 - Implemented robust flight controls for precision handling.
9. **Smart Home Automation System – IoT based Project** Dec 18, 2020 – Mar 28, 2021
 - Designed and prototyped a robotic arm with gesture recognition and automation capabilities.
 - Used Forward kinematics for arm motions
 - Home automation system with integrated gesture recognition and NFC security.
 - Controlled appliances and secured access using IoT protocols.

Training, Course & Workshops

1. **Disaster Risk Monitoring Using Satellite Imagery, NVIDIA** October 6, 2024
2. **Developing an AI Background Generator With NIM, NVIDIA** September 22, 2024

3. AI on Jetson Nano, NVIDIA	September 13, 2024
4. Assemble a Simple Robot in Isaac Sim, NVIDIA	July 9, 2024
5. Basics of Computer Vision for ROBOTICS, LASSET	May 29- June 13, 2024
6. Basics of IOT and Embedded system, LASSET	May 28 - June 19, 2024
7. MICROSFOT AZURE's Ambassador challenge Natural Language Processing (NLP)	May 12 – 16, 2024
8. Embedded System, BUEEC	Jan 27 – 31, 2024
9. PCB Design and Fabrication in IoT Perspective, BRACU Optics and Photonics Lab	Mar 28 – 31, 2022
10. Lorawan & Industry Automation, DoxPro Robotics Pvt. LTD	Nov 15 – Dec 18, 2022
11. Industrial PCB and System Design, IEEE Robotics & Automation Society	Oct 27 – Oct 28, 2021
12. Robot Operating System (ROS), IEEE Robotics & Automation Society	Oct 15 – 16, 2021
13. Python Programming, USA Embassy of Bangladesh and Arduino community BD	June 20 – 24, 2021
14. 3D printing, HP Life and HP Foundation	July, 2021
15. Design Thinking, HP Life and HP Foundation	July, 2021
16. Energy Efficiency, HP Life and HP Foundation	June, 2021
17. Fundamentals Of Latex, Robotics Club of BRAC University	Nov 20, 2020

AWARDS

- VC's Recognition Awards for Extraordinary volunteering work
- 5th Position in Sheikh Jamal Innovation Grant 2024 for Team DIPTO by IDEA And ICT Division
- Pre-Seed fund winner at University Innovation Hub 2024, Cohort – 1, By ICT Division & World Bank
- 4th Place in Robo Nokshar Ashor 2022
- Guinness World Record, Participant in the largest 10 km run organized by VirtualRunners (2021).
- 9-Time National Taekwondo Champion, 4 International Certifications and Awards 19 Gold, 7 Silver, 4 Bronze Medals.
- International Black Belt (2nd DAN) in Taekwondo, World Taekwondo Federation, Seoul, South Korea.

ACTIVITIES

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| 1. DIPTO – Team Lead, Co-Founder | Sep 2023 - Present |
| <ul style="list-style-type: none"> A Nano Satellite Training Kit. STEAM training kit Satellite based solutions | |
| 2. LASSET - Sub Team Lead (Electronics & Power) | Jan 2023 – Present |
| <ul style="list-style-type: none"> Laboratory of Space System Engineering & Technology - LaSSET. Autonomous Drone and Unmanned Ground Vehicle | |
| 3. Robotics Club of BRAC University (ROBU) – Secretary | Sep 2020 - Mar 2024 |
| <ul style="list-style-type: none"> Research and Project management (RPM) | |
| 4. BRAC university Electrical and Electronic Club (BUEEC) – Director & Assistant Director | Oct 2020 – Nov 2024 |
| <ul style="list-style-type: none"> Director of Graphics and Photography Assistant Director of Research and Development | |
| 5. BRACU DUBURI – Underwater Autonomous Vehicle | Sep 2020 - Dec 2023 |
| <ul style="list-style-type: none"> Senior member of Mechanical & Electronics team | |
| 6. Taekwondo, Korean Martial Arts – Black Belt 2 nd DAN | Dec 2012 – Present |
| <ul style="list-style-type: none"> Player of Bangladesh Taekwondo Federation (BTF) | |

ADDITIONAL

Technical Skills: Advanced in C, C++, Python, HTML, CSS, JavaScript; Proficient in MATLAB, PSpice, Proteus, KiCAD, Altium, EasyEDA, Fusion 360, AutoCAD, Blender, and Autodesk Maya. Experienced with machine learning algorithms (ANN, CNN, KNN), image processing, and embedded system development.

Other Languages: Intermediate in Japanese, German.

Soft Skills: Leadership, Quick Learner, Communication, Problem-Solving, Teamwork, Adaptability, Critical Thinking.