

ABDULLA AL-KIBRIA

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EDUCATION

- **Dhaka University of Engineering & Technology, Gazipur** 28 Nov 2021 - 01 Nov 2025
(Studying Final Year) BSc in Engineering in CSE CGPA: 3.02(4.00 Scale)
- **Bangladesh Sweden Polytechnic Institute, Kaptai** 01 Sep, 2015 - 06 Oct 2019
Diploma in Engineering in Computer Technology CGPA: 3.36(4.00 Scale)

EXPERIENCE

- **Machine Learning Intern, Brain Station 23,** 3rd March 2025 – 27th March 2025 Learned fundamentals of Machine Learning, including supervised and unsupervised models, and practical chatbot development using a pre-trained Hugging Face model. Worked with Python, scikit-learn, and NLP preprocessing to build and fine-tune conversational agents.

PROJECTS

1. **FANET Routing Protocol Research,** Conducting ongoing research on improving routing protocols for Flying Ad hoc Networks (FANETs) to enhance UAV communication reliability and network efficiency in dynamic aerial environments.
2. **Smart Fish Farming Monitoring System,** Developing an IoT-based system to monitor critical water quality parameters (DO, TDS, EC, turbidity) in fish farms for enhanced aquaculture productivity.
 - *Real-Time Monitoring:* Continuous data collection using sensors connected to ESP32.
 - *Cloud Integration:* Automatic data upload to a cloud server with alert notifications for abnormal conditions.
 - *Technologies Used:* ESP32, dissolved oxygen sensor, TDS and EC sensors, turbidity sensor, Firebase.
3. **Wildfire Monitoring and Alarm System,** Designing a low-cost early detection and alerting system for forest fire prevention using IoT and flame detection sensors.
 - *Early Detection:* Monitors temperature, flame presence, and smoke for real-time fire detection.
 - *Alarm and Alerts:* Sends instant notifications to authorities via Wi-Fi and triggers local alarms.
 - *Technologies Used:* ESP32, flame sensors, temperature sensors, buzzer, cloud dashboard.
 - *GitHub:* github.com/abdullaalkibria/wild_fire_monitoring_and_alert
4. **Question Vault Security System,** Developed an advanced Arduino-based security system to protect sensitive examination materials. Key features include:
 - *Dynamic PIN Authentication:* Generates unique, one-time-use UNLOCK and LOCK PINs for secure access.
 - *SMS Integration:* Sends real-time authentication details to a registered phone number embedded in the code.

- *Brute-Force Defense*: Locks the vault after 3 failed attempts and alerts the authorized user via SMS.
- *Enhanced Access Control*: Requires separate PINs to unlock and lock, ensuring double-layered security.
- *Technologies Used*: Arduino Nano, SIM800L GSM module, servo motor, and a 4x4 keypad.
- *GitHub*: github.com/abdullaalkibria/Question_Vault_Security_System

This project enhances security and integrity in academic settings, addressing the critical issue of question paper leakage.

5. **MediBot**, Designed and developed a versatile robotic platform using Arduino Giga, DC gear motors, IR sensors, sonar, and other components. The bot performs autonomous navigation, obstacle detection, and path planning, tailored for medical supply delivery applications.
GitHub: github.com/abdullaalkibria/MediBot
6. **Advance Line Follower Robot**, Engineered an optimized line-following robot using Arduino Nano and DC gear motors. Incorporated high-precision sensors and efficient algorithms to achieve speed and accuracy in various competition environments.
GitHub: github.com/abdullaalkibria/Advance_Line_Follower_Robot
7. **Smart Water vehicle**, Built a water-based autonomous vehicle using Arduino Nano, ESP8266, and sonar sensors for environmental monitoring. The project included IoT integration for real-time data collection and remote control.
8. **IntelliGuard Access**, Developed an intelligent access control system combining ESP8266, servo motors, flame and earthquake detectors, and Google Firebase for cloud-based monitoring and data management. Integrated a mobile application using Flutter to allow real-time alerts and remote control of the system.

CO-CURRICULAR ACTIVITIES

1. **Vice President** , DUET Robotics Club, DUET, Gazipur
2. **Co-Leader**, DUET Marse Rover Squad, DUET Robotics Club, DUET, Gazipur
3. **Former General Secretary**, DUET Robotics Club, DUET, Gazipur
4. **Former Additional Network & Communication Secretary**, DUET Computer Society, DUET, Gazipur

SKILLS

- **Programming Languages and Frameworks**
Arduino Coding, C, C++, Python, SQL, PL/SQL
Intermediate at ML & Data Science
- **Strong Foundation on IoT and Robotics**
- **Problem Solving and Critical Thinking**
- **Team Collaboration**
- **Quick Learner**
- **Languages**
Bangla - Native
English - Conversational

AWARDS AND ACHIEVEMENTS

1. **Line Follower Robot** , Robotics Competition Segment in Techtron 2025 at University of Asia Pacific
Champion *25th April, 2025*
2. **Line Follower Robot** , Bitrobot Competition Segment in Bitfest-2025 at Khulna University of Engineering & Technology, Khulna
1st Runner-up *04th January, 2025*
3. **Line Follower Robot** , Robotics Competition Segment in 11th GSC National Scientist Mania-2024
Champion *23rd November, 2024*
4. **Maze Solver Robot** , Robotics Competition Segment in Techfest, IIT Bombay Bangladesh Zonal 2024
1st Runner-Up *25th October, 2024*
5. **Line Follower Robot** , Robotics Competition Segment in 6th JUSC National Science Festival-2024
Champion *21st September, 2024*
6. **Advance Line Follower Robot** , DUET Techfest 2023
2nd Runner-up *14th July, 2023*
7. **Smart Water Vehicle** , Project Exhibition Segment in IDPC 2023
1st Runner-up *26th February, 2023*