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: 3.01(4.00 Scale)

PROJECTS

1. **Smart Water Level Monitoring and Motor Control System (Ongoing),** Developing a LoRa-based Smart Water Level Monitoring and Motor Control System for STA Hall, DUET. The project features real-time water level sensing using ultrasonic sensors and Arduino Mega, with data transmitted wirelessly to the ground floor. It automates the operation of two 2HP submersible pumps via solid-state relays (SSRs) and includes an intuitive display interface, alert system, and manual override for enhanced efficiency and resource management. Designed for long-term, industry-grade reliability to prevent water overflow and optimize resource utilization.
2. **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.

   This project enhances security and integrity in academic settings, addressing the critical issue of question paper leakage.
3. **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.
4. **Advance Line Following 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.
5. **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.
6. **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.

7. **IoT Based Quail Feeding Management System** , Designed an automated quail feeding system leveraging ESP8266, servo motors, and Google Firebase for IoT functionality. Developed a mobile application using MIT App Inventor to enable remote control and real-time monitoring of the feeder.

CO-CURRICULAR ACTIVITIES

1. **Vice President** , DUET Robotics Club, DUET, Gazipur
2. **Former General Secretary** , DUET Robotics Club, DUET, Gazipur
3. **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 Learning**
- **Languages**
  Bangla - Native
  English - Intermediate

AWARDS AND ACHIEVEMENTS

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