IMTIAZ AHMED

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Dhaka, Bangladesh

GitHub
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Education

- **Master of Science in Robotics and Mechatronics Engineering** Apr 2024 - Present
  University of Dhaka, Bangladesh

  CGPA: **3.96/4.00** (Thesis defense pending)

  Relevant Coursework:
  - Bio Robotics
  - Computational Human-Robot Interaction
  - Computer Vision
  - Internet of Things
  - Automotive Control and Simulation
  - Industrial Automation

- **Bachelor of Science in Robotics and Mechatronics Engineering** Jan 2019 - Mar 2024
  University of Dhaka, Bangladesh

  CGPA: **3.62/4.00**
  Relevant Coursework:
  - Introduction to Robotics
  - Artificial Intelligence
  - Introduction to Machine learning
  - Object Oriented Programming
  - Digital Signal Processing
  - Digital Image Processing and Robot Vision
  - Power Electronics and Drives
  - Advanced Mechatronics Engineering
  - Linear Algebra
  - Mathematical Analysis

- **Higher Secondary Certificate Examination,2017** 23 July, 2017
  Notre Dame College, Dhaka

  GPA: **5.00/5.00**

- **Secondary School Certificate Examination,2015** 30 May, 2015
  Kushtia Zilla School,Kushtia

  GPA: **5.00/5.00**

Research Interests

Machine Learning, Bio-medical Signal Processing, Wearable and Assistive Devices, Soft Robotics.

Training

- **Training Program:** Modular Production System (MPS®) and CIROS Software
  Organizer: Sincos Engineers Ltd. — Sincos Automation Technologies Ltd.
  Location: Dhaka University

  - Installation and commissioning of the Festo MPS system
  - PLC programming on the Siemens platform

Teaching Experience

- **Math Instructor**, **10 Minute School** Mar 2023 - June 2025

  - Best Doubt Solver of the Month (Aug,2023)

Projects

- **Multi-Sensor Fusion for Controlling a Soft Pneumatic Hand Exoskeleton** [Sept 2024] - [Nov 2025]

  Topic: Real-Time Machine Learning Application & Soft Robotics
  - Designed and optimized Ecoflex-based soft pneumatic actuators using FEA, achieving a high bending angle of 288.79° with external thread reinforcement.
  - Developed a real-time gesture recognition system using an armband with ADXL335 and IMU sensors to control the exoskeleton.
  - Implemented and compared ML models (XGBoost, Random Forest, SVM), with Random Forest achieving 93.01% accuracy for reliable actuator control.

- **Designing A Biomimetic Fish Robot With Fluidic Actuation** Jan 2023 - Jan 2024

  Topic: Soft Robotics
  - Designed a fish robot incorporating fluidic actuation for biomimetic underwater movement.
  - Developed and tested soft actuators with varying numbers of chambers to study their deformation behavior.
  - Conducted a comparative analysis to evaluate how the number of chambers influences actuation performance.

- **Enhancing GRE Vocabulary Learning through Interactive Sessions with Nao Robot** Aug 2023 - Nov 2023

  Topic: Human-Robot Interaction
  - Developed an interactive vocabulary learning system using the NAO robot to assist with GRE preparation.
  - Programmed the robot to teach word meanings, explain usage, and provide sentence examples.
  - Integrated a comprehensive GRE word list to ensure broad vocabulary coverage.

Awards and Scholarships

- National Education Board Scholarship (General Scholarship,Awarded for outstanding result in Secondary School Certificate (S.S.C) examination), Bangladesh, 2015
- National Education Board Scholarship (Talent Pool Scholarship in Junior School Certificate (J.S.C) examination), Bangladesh, 2012
- National Education Board Scholarship (Talent Pool Scholarship in Primary School Certificate (P.S.C) examination), Bangladesh, 2009

Technical Skills

- **Programming Languages:** Python, C/C++, MATLAB, LaTeX
- **Frameworks & Libraries:** Arduino, ESP32
- **IoT & Embedded Systems:** Microcontrollers, Sensors, Actuators, IoT Protocols
- **Robotics:** Robot Kinematics, Control Systems, Sensor Integration
- **Tools:** Comsol Multiphysics, SolidWorks, Git, AutoCAD, Fusion 360, PCB Design
- **Professional:** Technical Writing, Research Methodology, Project Management

Leadership/Volunteer Activities

- **Student Activity Secretary(2022)** Aug 2021 – Sept 2022

  IEEE Electron Device Society (EDS) Student Branch Chapter, University of Dhaka
  - Organised several webinars, interactive sessions, and expert talks
  - Collaborated with other IEEE societies across the country

- **Academic Team Mentor** Sep 2020 – Aug 2021

  Bangladesh Robot Olympiad
  - Developed questions for the National Robotics Olympiad and organized workshops

References

- **Dr. Md Mehedi Hasan**
  Assistant Professor, Dept. of Robotics and Mechatronics Engineering
  Faculty of Engineering and Technology, University of Dhaka
  Email: mmhasan@du.ac.bd
  Mobile: 01707034821

- **Dr. Shugata Ahmed**
  Assistant Professor and Chairman, Dept. of Robotics and Mechatronics Engineering
  Faculty of Engineering and Technology, University of Dhaka
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