KAZI TAUHID MOKBUL HUSSAIN

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EDUCATION

Military Institute of Science and Technology **Dhaka, Bangladesh**

Bachelor of Science, Aeronautical Engineering, **CGPA: 3.81 / 4.00** **2021-2025**

Relevant Coursework: *Applied Aerodynamics, RADAR Engineering, Control Systems, Aircraft Stability, Fluid Mechanics, Aircraft Communication and Navigation, Digital Signal Processing, Numerical Analysis.*

ACADEMIC PROJECTS

Multi-copter Drone-based Aerial Network for Autonomous operation, Dynamic Target Detection & Analysis

- An airborne network for coordinated data communication and autonomous operation of drones.
- Close proximity surveillance with simultaneous data feed to achieve a global awareness of situation.
- Engineered swarm-based coordination with image analysis by a group of drones.

Design and Implementation of a GPS-IMU Based Failsafe Navigation System for UAVs

- Designed and implemented an Arduino-based Return-to-Home system for UAVs using GPS and IMU sensor fusion for autonomous navigation.
- Enabled real-time position tracking, validated through coordinate plotting on Google Earth and distance calculations.

LEADERSHIP & PROJECT MANAGEMENT

AIAA 29th Annual Design, Build, Fly 2025 ***Team Meghdoot / MIST***

Team Leader ***Sep 2024 – Apr 2025***

- Led the design, fabrication and mission planning of the aircraft, ensuring operational requirements and deadlines.
- Coordinated multidisciplinary teams to optimize aircraft performance, simulation, construction, and testing.
- Compiled technical reports and system logs of performance for evaluation and continuous improvement.

MIST Aeronautics and Astronautics Club

President ***Mar 2024 – June 2025***

- Defined the club's strategy and increased engagement through projects and events.
- Organizing technical workshops and seminars to enhance technical knowledge and professional development.
- Provided mentorship to students, guiding them in research, simulation and hands-on aerospace applications.

MIST Photographic Society

Director of Logistics ***Apr 2024 – May 2025***

- Managed logistics for events, photo shoots and exhibitions ensuring smooth execution.
- Oversaw equipment inventory, transportation and coordination within the society.

MIST AIAA Student Branch Organization

Technical Project Director ***Dec 2024 – June 2025***

- Led technical planning and execution of aerospace-related student projects and workshops.
- Coordinated teams, resources, and mentorship to ensure successful project outcomes.

AWARDS & ACHIEVEMENTS

- **MIST Dean's List of Honor** (2022, 2023, 2024) for earning a GPA greater than 3.80 in each academic year.
- Ranked **39th position** in AIAA Design/Build/Fly Competition 2025 at Tuscon, Arizona, USA.
- Participated in AIAA Design/Build/Fly 2024 at Kansas, Wichita, USA and ranked **71st position.**

MENTORING EXPERIENCE

Volunteer Course Proctor - AIAA Online Courses (taught by George Mason University & UCF faculty)

- Assisted in course coordination, student queries, and content support for 4 online short courses.
- Helped facilitate interaction between instructors and 50+ students globally.

Mentor - MIST Aeronautics and Astronautics Club

- Guided junior students on simulation tools (e.g., XFLR5, MATLAB, Simulink) and UAV design basics.

Private Tutor & Coaching Center Instructor

- Taught Physics, Math, and ICT to high school and college students; adapted lessons to individual learning needs, resulting in improved academic performance

PUBLICATION

- **Study of Robotics and Automation in the Aerospace Industry**, DOI: 10.13140/RG.2.2.15118.57927

ONLINE COURSES AND CERTIFICATIONS

- ***Responsible AI in Aerospace – AIAA Learning Track*** ***Apr 2025 – May 2025***
  - Studied AI ethics & policy, generative models, and systems engineering for aerospace.
- ***Aerial Robotics – University of Pennsylvania*** ***Jan 2025 – Feb 2025***
  - Modeled quadrotor kinematics and designed autonomous controllers in MATLAB.

INTERNSHIP

- ***Industrial Training - Biman Bangladesh Airlines*** ***Feb 2024***
  - Observed aircraft maintenance protocols and AMCC operations.
- ***Maintenance Training - MROU 214 & 216, Bangladesh Air Force*** ***Feb 2024***
  - Gained practical exposure to operational standards in military MRO (Maintenance, Repair & Overhaul) units.

TECHNICAL SKILLS

Programming: **Python, MATLAB**

Design & Simulation: **SolidWorks, XFLR5, Flight Gear, Simulink**

Embedded System & Hardware: **Arduino, Raspberry Pi, Pixhawk, ESP 32**

Office & Documentation Tools: **Microsoft Office Suite, Mendeley, LaTeX**

Soft Skills: **Project Management, Problem Solving, Quick Learning**

RESEARCH INTERESTS

- UAV networking and swarm coordination in dynamic environments.
- Responsible AI frameworks for vision-based autonomous aerial surveillance and target detection.
- Design and control optimization of hybrid VTOL UAVs for multi-purpose agile operations.