

Abu Bakkar Siddique Emon

abubakkar0001@std.uftb.ac.bd | +8801518979969

 ABU BAKKAR SIDDIQUE EMON |  ResearchGate |  github.com/ABS-EMON
abs-emon.github.io

Professional Summary

Innovative IoT, Robotics, AI/ML and Aerospace Engineer and researcher with expertise in embedded systems, autonomous UAV development, and IoT-based systems. Skilled in Python (TensorFlow, OpenCV, NumPy, Pandas, and package development 'emon'), MQTT, C++, Java, Unity, ROS2, Gazebo, RViz2, and PX4 for simulation and autonomous control. Experienced with Arduino, ESP32, Raspberry Pi, and Pixhawk hardware, and proficient in full-stack tools like Laravel and Flutter. Passionate about integrating AI/ML to build intelligent, resource-efficient systems and exploring emerging technologies in UAVs, Aerospace, AI/ML, and AR/VR applications.

Education

University of Frontier Technology, Bangladesh

B.Sc. in IoT and Robotics Engineering

Aug 2023 – May 2027 (Expected)

Nasirabad College, Mymensingh

H.S.C. (Science), GPA 5.00

Aug 2020 – Feb 2022

Monsurpur A.H.T High School, Netrokona

S.S.C. (Science), GPA 5.00

Jan 2018 – Feb 2020

Experience

SU-27 RC Jet Development and Operator, UFTB

Aug 2024 – Jun 2025

- Manually built, assembled, and tuned a lightweight RC SU-27 jet.
- Conducted test flights, integrated Pixhawk and Mission Planner for flight stabilization and telemetry.

Quadcopter Development & Operator, UFTB

Aug 2024 – Jun 2025

- Designed and built a GPS-enabled quadcopter from scratch with responsive flight control.
- Integrated sensors, ESCs, and brushless motors for stable and precise flight operation.

Unity & VR Game Development, UFTB / TGG Organization

Apr 2025 – May 2025

- Developed and published a 3D Car Racing Game, 2D Role-based Access Game, and XR Drone Simulator using Unity and C#.
- Built immersive simulations demonstrating game physics, object-oriented programming (OOP) principles, and interactive XR training.
- Released WebGL games and published the XR drone simulator on Itch.io.

Laravel & AI ChatBot Development (Japanese AI Course), TGG Organization

Jan 2025 – May 2025

- Developed Laravel-based projects including Blog Web App, To-Do List, and AI-powered Chatbot with OpenAI API integration.

- Managed backend databases (MySQL) using HeidiSQL, TablePlus, and DB Engine; tested APIs with Postman.

Python Package Developer, UFTB

Apr 2025 – Present

- Published a Python package named **emon** on PyPI.

Android App Developer, Amazon Appstore

June 2024 – Dec 2024

- Published Online Tools, Calculator, and Namata apps.
- Integrated AdMob for monetization.

Web Developer, UFTB Robotics Club

Jan 2024 – May 2024

- Designed and deployed secure, performance-optimized websites.

Projects

Quadcopter Drone Development

November 2025 – Present

Pixhawk, Mission Planner

- Designed a GPS-enabled quadcopter with responsive flight control.

RC Plane GPS Telemetry System

september 2025 – Present

Pixhawk, Mission Planner, MAVLink

- Integrated real-time GPS telemetry with RC aircraft for remote monitoring.
- Visualized flight data via telemetry modules and analyzed performance.

Drone Simulator XR(Extended Reality) Project

May 2025 – Present

Unity, C#, Flight Physics

- Developed an immersive XR drone simulator for training, published on Itch.io.
- Designed a flight simulator replicating real-world quadcopter dynamics.
- Implemented PID-tuned flight control and mission simulation environments.

AI-Powered Chatbot Web App (Japanese AI Course)

Mar 2025 – May 2025

Laravel, PHP, MySQL, Tailwind CSS, OpenAI API

- Integrated AI-powered chatbot with voice-to-text, text-to-voice, and AI image generation.
- Managed backend databases using HeidiSQL, TablePlus, and DB Engine; tested APIs via Postman.

Laravel To-Do List Web App

Feb 2025 – Apr 2025

Laravel, PHP, MySQL, Tailwind CSS

- Created a task management app with CRUD operations and responsive UI using Tailwind CSS.

Laravel Blog Web App

Jan 2025 – Mar 2025

Laravel, PHP, MySQL, Tailwind CSS

- Developed a blogging platform with full CRUD functionality, user authentication, and responsive design.

2D Game with Role-based Access

Apr 2025 – May 2025

Unity, C#

- Implemented role-based access using polymorphism to demonstrate OOP concepts.

IoT-based Health Monitoring System

May 2025 – Present

ESP32, Firebase, IoT Dashboard

- Built an ESP32-based system to monitor heart rate and temperature remotely.
- Visualized real-time data in Firebase dashboard and triggered alerts.

3D Car Racing Game

May 2025 – Present

Unity Engine, C#

- Custom vehicle dynamics, terrain, camera, and controls.

Sign Language Detection

Jan 2025 – Present

Python, TensorFlow, OpenCV

- Implemented ASL sign detection system using ML and OpenCV.

School Management System

Aug 2024 – Dec 2024

HTML, CSS, PHP, MySQL

- Full-stack web app for school operations.

Student Expense Tracker App

October 2025 – Present

- A Flutter-based Android app with a PHP backend and MySQL Database for students' expense tracking.

Online Store

Jan 2025 – Present

- Customized Amazon-style e-commerce with Blogger and JS.

Publications

A. B. S. Emon, S. C. Das, A. Hasib, Md. Ashiquossalehin, "Aerobotics: A Low-Cost IoT-Based Real-Time Telemetry and Risk Prediction System for RC Aircraft Using ESP32 and Machine Learning," in *2025 28th International Conference on Computer and Information Technology (ICCIT)*, Cox's Bazar, Bangladesh, 2025, pp. 1–6.

DOI: 10.1109/ICCIT63776.2025.10546980 (979-8-3315-7867-1/25/\$31.00 ©2025 IEEE)

Technical Skills

Languages: Python, C, C++, Java, PHP, SQL, C#, Dart

ML Frameworks: NumPy, Pandas, Matplotlib, TensorFlow, Scikit-learn

App: Java, Flutter, Kotlin, Android Studio

Web: HTML, CSS, JavaScript, FastAPI, PHP, Laravel, MySQL, WordPress

Tools: VS Code, PyCharm, Unity, Arduino, ESP32, Pixhawk, raspberry pi, Mission Planner

Others: ROS2 (rviz2, Gazebo), OpenCV, Git, Blender, Cisco Packet Tracer

Training

AI for Immersive Technology (BDSET)

October 2025 – Present

Kaliakoir Hi-Tech Park, Gazipur

AI/ML, Python, Deep Learning, AR/VR/MR/XR, Communicative English

- Gained hands-on experience in AI/ML model development and intelligent system design using Python.
- Learned immersive technology development with AR, VR, and MR using Unity 3D.
- Completed industry-focused training with advanced lab facilities and globally recognized certification.

Japanese AI Course (TGG Organization)

Jan 2025 – Mar 2025

Laravel, PHP, MySQL, Tailwind CSS, OpenAI API

- Completed multiple Laravel-based projects including Blog Web App, To-Do List Web App, and AI-powered Chatbot.
- Gained hands-on experience with backend management tools (HeidiSQL, TablePlus) and API testing (Postman).

Japanese VR Course (TGG Organization)

Apr 2025 – May 2025

Unity, C#

- Developed 3D Car Racing Game, 2D Game with Role-based Access, and XR Drone Simulator.
- Learned game physics, object-oriented programming (OOP), and immersive XR simulation.

Web Development Training (UYLab)

Jan 2024 – May 2024

HTML, CSS, JavaScript, PHP, MySQL

- Learned full-stack web development and built secure, performance-optimized applications.

Leadership & Activities

Project and Workshop Secretary, UFTB Robotics Club

2025 – Present

Organized robotics workshops, project exhibitions, and technical training sessions to enhance members' practical skills.

Olympiad Coordinator, UFTB Math Squad Club

2025 – Present

Coordinated inter-university math olympiads and academic events, fostering collaboration and problem-solving excellence among participants.

Awards and Scholarships

Shaheed Syed Nazrul Islam Scholarship for HSC (2023)

15th National Undergraduate Math Olympiad Finalist (2024)

Student Robot Development Fund 2025 (Robo Tech Valley)

Certifications

Python Basics, NASA Space App Challenge, Robotics Course, Machine Learning, AWS ML, Soft Skills, VS Code Udemy Certificate, Hackerrank Problem Solving, ML Specialty, AI Concepts Microsoft, Excel for Workplace, WordPress Theme UYLab, Math Olympiad Participation, Math Olympiad Achievement

References

Farzana Akter, Assistant Professor, Dept. of IRE, University of Frontier Technology, Bangladesh

Email: farzana0001@uftb.ac.bd

Saurav Chandra Das, Lecturer, IRE, University of Frontier Technology, Bangladesh

Email: saurav0001@uftb.ac.bd

Suman Saha, Chair, Dept. of IRE, University of Frontier Technology, Bangladesh

Email: suman0001@uftb.ac.bd

Md. Toukir Ahmed, Assistant Professor, Dept. of IRE, University of Frontier Technology, Bangladesh

Email: toukir0001@uftb.ac.bd