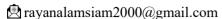
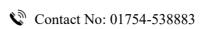
Rayan Alam







PROFILE

A passionate Computer Science student at American International University-Bangladesh with strong foundational knowledge in drone systems, machine learning, artificial intelligence, and computer vision. Well-versed in real-time object detection, deep learning architectures and autonomous navigation. Possesses a solid understanding of AI-driven systems, embedded technologies, and intelligent automation.

EDUCATION

American International University-Bangladesh | Dhaka 1229

September 2021 - Present

Bsc in Computer Science and Engineering

Current CGPA: 3.80 Out of 4.00

Rajbari Govt College | Rajbari Sadar, Rajbari

2019-2020

Higher Secondary Certificate Examination

Subjects: Science

CGPA: 4.33 Out of 5.00

Rajbari Govt. High School | Rajbari Sadar, Rajbari

Secondary School Certificate Examination

2017-2018

Subjects: Science GPA: 4.39 Out of 5.00

Skills

Artificial Intelligence & Machine Learning

Machine Learning, Deep Learning, Computer Vision (Image Processing, Object Detection using CNNs and YOLO)

Robotics & Automation:

Robotics, Robot Operating System (ROS), Autonomous Systems, Drone Technology

Programming Languages

Python, C++, C#, Java

Web Development

Laravel, HTML, CSS

App Development

Flutter

Databases

MySQL

Computer Science Fundamentals

Data Structures, Algorithms

ACHIEVEMENTS

- Gold Medal (Champion) 7th WICE 2025 Bangladesh National Round for *AeroHarvest: Aerial Crop Yield Prediction*, representing AIUB as Team Leader; selected for the international round in Malaysia.
- Achieved **2nd Runner-up** in **Robo Soccer** at the **AIUB CS Fest 2024**, demonstrating advanced robotics and teamwork skills.
- Successfully completed IT Essentials: PC Hardware and Software through the Cisco Networking Academy program, gaining comprehensive knowledge of computer hardware and software systems. (2021)
- Participated in the **Bangladesh Robot Olympiad 2018**, gaining valuable experience in robotics and competitive innovation.
- Awarded Best Young Inventor at the **Digital Innovation Fair 2018** for outstanding creativity and innovative contributions in technology.
- Secured 1st Place in the **District Science Fair 2017**, showcasing exceptional innovation and scientific aptitude.

Academic Project

1. Weapon Detection Using Drone

- Developed a drone-based system for real-time weapon detection using advanced computer vision techniques.
- Deployed the YOLO object detection model in the cloud to process aerial footage captured by the drone.
- Enabled live streaming and real-time inference for immediate threat detection, enhancing surveillance capabilities in open environments.

2. Aerial Crop Yield Prediction System

- Developed a drone-based system to capture aerial footage of rice fields.
- Created a custom dataset and trained a YOLO model to detect rice panicles and predict yield.
- Provides data-driven insights to aid farmers and agricultural planners in yield management.

3. Autonomous Factory Robot with Hazard Detection

- Developed a smart robot using Raspberry Pi and ROS (Robot Operating System) for autonomous navigation with SLAM (Simultaneous Localization and Mapping) and real-time obstacle avoidance.
- supporting efficient material transport in industrial environments.
- Supports both autonomous and manual control modes via a mobile app, with real-time monitoring for improved operational flexibility.

4. Smart Blind Assistant System

Created an innovative system combining a **smart glass** and a **smart stick** to assist visually impaired individuals:

Smart Glasses:

- Python code processed the footage using YOLO to detect objects and uploaded the object name and confidence level to a Flask API server.
- Developed a Flutter Android app that fetched object names from the server and converted them to speech for the user via Bluetooth earphones.

Smart Stick:

- Buzzer alerts when objects are within 30 cm.
- Real-time GPS data is uploaded to a local server, allowing relatives to navigate the blind person's location.

5. Safe and Secure Eco-Monitoring IoT Smart Home System

- Developed a smart home automation system using Arduino and NodeMCU for enhanced safety, energy efficiency, and convenience.
- Integrated features include password-protected door access, gas and fire detection with buzzer alerts, and automatic watering of home potted plants based on soil moisture levels.
- Built a Flutter-based mobile app to remotely control home appliances and display real-time alerts and status updates such as fire/gas detection and door activity.

6. University Course Registration System

• Developed a C# desktop application for a University Course Registration System with a SSMS database backend.

7. Crowdfunding Web Application

• Developed a web-based crowdfunding platform using PHP, HTML, CSS, and MySQL.

8. Robo Soccer

• Designed and built a robot capable of playing soccer.

9. Lexical Analyzer – Compiler Design Project

- Developed a lexical analyzer using C++.
- Capable of tokenizing input code and identifying programming language constructs to support subsequent stages of compilation.

Clubs & Community Service

• Crew Member of Software Team at AIUB Robotic Crew