

AL MOMINUL HAQUE BADHAN

Tel : +601162060413

E-mail : badhanalmominulhaque@gmail.com

LinkedIn : <https://www.linkedin.com/in/al-mominul-haque-badhan-998a471ba>

Portfolio Website : almominulhaquebadhan.com

Address : M04-02-145, Melawis
Apartment, Taman Universiti, Skudai,
Johor ,81310, Malaysia

EXPERIENCE

A2TECH SDN. BHD , Malaysia — Head of Electrical and Electronics Department

April 2023 - PRESENT

A2TECH SDN. BHD , Malaysia — Electrical and Electronics System Engineer

November 2022 - March 2023

Center for Artificial Intelligence and Robotics (CAIRO), UTM , Malaysia — Intern

July 2022 - October 2022

A2LAB, UTM , Malaysia — Undergraduate Research Assistant

February 2022 - June 2022

EDUCATION

Universiti Teknologi Malaysia — Bachelor of Electrical and Electronics Engineering

February 2025 (Expected)

New Govt Degree College, Rajshahi — Higher Secondary School Certificate

2019

Naogaon K.D. Govt High School, Naogaon — Secondary School Certificate

2017

INDUSTRIAL PROJECTS

- ROV INSPECTO -UC (Lead Electrical and Embedded System Engineer) — Designed electrical , communication , embedded systems and assembly for a specialized deep water tank cleaning ROV.**
- ROV INSPECTO-UF2 (Lead Electrical and Embedded System Engineer) — Developed electrical systems and control enhancements for a 100-meter depth capable inspection ROV.**
- ROV INSPECTO-UF(Lead Electrical and Embedded System Engineer) — Engineered electronic solutions and optimized controls for a 300-meter depth deep-sea inspection ROV.**
- X3CATOR-R Mobile Robot for Malaysian Firefighters (Lead Electrical and Embedded System Engineer) — Crafted advanced sensory and communication systems for a firefighter support UGV.**

SKILLS

- Embedded System Design
- PCB Design
- Electronic System Design
- IoT
- Circuit Simulation
- Wired and Wireless Communication (Radio , Mesh, Wifi, Powerline)
- Programming Languages: C, Python
- Troubleshooting
- HVC System

EMBEDDED CONTROL MODULE

- Autonomous vehicles control and navigation board powered by ARM[®] Cortex[®]-M7 processor with RC,CANBUS , RS232 and RS485 support**
- ARM[®] Cortex[®]-M7 based Microcontroller (STM32H743)**
- ARM[®] Cortex[®]-M4 based Microcontroller (STM32F407)**
- ARM[®] Cortex[®]-M3 based Microcontroller (STM32F103)**
- STM32F103C8T6 Based smart motor driver**
- High-Power DC Motor Driver**
- Raspberry Pi HAT Relay Module**
- CH340G USB to UART Module**
- ATmega328-Based Microcontroller**
- Control and modular**

5. **X3CATOR-S Modular UGV Platform (Lead Electrical and Embedded System Engineer)** — Led the development of a modular and autonomous UGV platform with flexible sensory systems.

6. **RHINO UGV Platform for MPOB (Lead Electrical and Embedded System Engineer)** — Directed electrical system integration for a fruit collection UGV tailored to the palm oil industry.

7. **RHINO-F UGV for Palm Fruit Carriage (Lead Electrical and Embedded System Engineer)** — Engineered a robust UGV capable of carrying 500 kg of palm fruits on inclined surfaces.

9. **Ikaros V1 Indoor Autonomous Inspection Drone (Lead Electrical and Embedded System Engineer)** — Spearheaded the complete design and development of an indoor inspection drone with advanced imaging.

10. **Ikaros V2 Outdoor Inspection, Mapping and Surveillance Drone (Lead Electrical and Embedded System Engineer)** — Enhanced and integrated systems for an outdoor inspection and mapping drone.

11. **Inspecto-D Multitask Modular Duct Robot (Lead Electrical and Embedded System Engineer)** — Implemented electrical and communication systems in a multitask duct inspection robot.

12. **"Oil2Wang" Bio-diesel Collection Booth (Lead Electrical and Embedded System Engineer)** — Developed a solar-powered bio-diesel collection booth with integrated sensors and security systems.

13. **IOT based Landslide prediction and monitoring system** - Faculty of Civil Engineering, UTM.

14.. **AEYE** - Blind people assistant module.

15. **Deep Port Vision**- Smart container management system for The Port of Tanjung Pelepas .

16. **PanopticShield** - Redefining Automotive Safety with 360° Vision , Air Quality Detection, Microsleep detection, Auto Beam Assist and Auto park assist.

function board for Inspecto-D .

LANGUAGES

- English
- Bengali
- Hindi

COMPETITIONS AND AWARDS

- Rookie award in Not a Boring Competition by Elon Musk
- Champion at Microsoft APAC AI FOR ACCESSIBILITY HACKATHON 2023
- Runner up at MRANTI World Engineering Day Design Challenge 2023
- Champion at AGRINXT 2023
- Champion at ElectreCup at ESTECH 2023
- POWER INDUSTRY AWARD for Electrical Engineering Capstone Showcase 2023
- Runner up at InvenMax 4.0

INTELLECTUAL PROPERTY

- **Ikaros V1 Indoor Autonomous Inspection Drone**

Developed and secured a patent for the Ikaros V1, an innovative indoor autonomous inspection drone designed to navigate and analyze complex indoor environments.

INDUSTRIAL CERTIFICATION AND STANDARDS

- **Inspecto Multitask Duct Robot**

Certification Standard : IEC 62368-2018

Certification provided by : SIRIM QAS International Sdn. Bhd.

PUBLICATION

1. PV Solar-Vertical Axis Wind Turbine Hybrid System Analysis for Hatiya Island of Bangladesh for Vaccine Preservation, ICUW Conference 2022.
2. Synergizing Underwater Robotics and AI: A Tethered ROV and YOLOv7 Approach to Giant Clam Detection , Springer Nature 2024.
3. Human-like Robotic Pinching End Effector (HRPEE) using McKibben Muscles on UR5 Robotic Arm, Journal of Advanced Research in Applied Sciences and Engineering Technology 2024.