

Shantanu Rahman

Robotics & Computer Vision Engineer

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Profile

- **3 year** professional experience with Edge systems, IoT, and robotics.
- **8+ years** of coding experience, specializing in algorithms and data structures.
- Critical thinking and problem solving from participating in competitive programming
- Proficient in **Linux** and skilled in languages like **C/C++** and **Python**.
- Robotics & Computer Vision enthusiast with practical knowledge about robotic perception **computer vision**.

Professional Experience

Associate Embedded Systems Engineer (*Therap BD Ltd*) **Banani, Dhaka** 07/2024 - present

- Model testing and implementation using ONNX, TensorRT, Deepstream etc.
- Working with Edge Computing devices, such as, Jetson, Rpi, LattePanda based systems
- Data collection and annotation using coordinated cameras.

Embedded Systems RnD Intern (*Spectrum Consortium Ltd*) **Kawranbazar, Dhaka** 09/2023 - 06/2024

- Developed an automated embedded system for bridge-toll collection.
- Researched and developed control hardware/software for camera gimble on a delivery/retrieval robot.
- Contributed to the development of the camera gimble system of a delivery/retrieval robot.

Research & Development Intern (*ANTS Aerial Systems Ltd.*) **Uttara, Dhaka** 06/2022 - 08/2022

- Researched and developed an algorithm from scratch for controlling a swarm of unmanned aerial vehicles.
- Conducted test flights and data collection and compiled regular reports for those flights

Areas of Expertise

Pytorch - TensorFlow - ONNX - MATLAB - Computer Vision - AI/ML - Network Architecture - ROS/ROS2 - Control Algorithms - Robotics - C/C++ - Git - Polyglot - CTF

Education

BSc Eng. Electrical & Electronic Engineering *Islamic University of Technology* **Gazipur, Dhaka** 2020-2024

- Was awarded **OIC Full Scholarship** for being the **top student in the entrance exam**
- Final year CGPA **3.88** out of 4.00
- **13th** in the whole EEE department among 150+ peers
- Maintained above par extra curricular activities and professional internships
- Relevant Courses: Digital Signal Processing, Data Structures & Algorithms, Digital Logic Design, Embedded Systems Design (8051), Microprocessor and Assembly Language (8086)

Higher Secondary School Certificate Science *Notre Dame College* **Motijheel, Dhaka** 2017-2019

- GPA 5.00 (Science)

Academic Publications

- Ibrahim, M. S., Rahman, S., Hasan, M. S., Ahmad, M. U., & Abrar, A. (2022, December). Flow-Based Path Planning for Multiple Homogenous UAVs for Outdoor Formation-Flying. In *2022 7th International Conference on Mechanical Engineering and Robotics Research (ICMERR)* (pp. 18-26). IEEE.
- Hossain, S., Fahim, I. N., Ahmed, A., Arika, A. M., & Rahman, S. (2023, October). Techno-Economic Analysis Of Solar/Wind/Biogas Hybrid Renewable Energy System in Bangladesh Using Metaheuristic Algorithms. In *2023 First International Conference on Advances in Electrical, Electronics and Computational Intelligence (ICAEECI)* (pp. 1-8). IEEE.
- Rahman, S., Hasin, N., & Islam, M. (2024). *Development of a Testbed for Autonomous Vehicles: Integrating MPC Control with Monocular Camera Lane Detection* (Doctoral dissertation, Department of Electrical and Electronics Engineering (EEE), Islamic University of Technology (IUT), Board Bazar, Gazipur-1704, Bangladesh).

Extra Curricular Activities

CTF Player — rub1ck ([IUT GENESIS](#))

- Specialist in Embedded Systems Security
- Achieved top places in International CTFs such as RITSEC (7th) and National Ctf's such as RIoT Flag Hunt (1st among over 70 teams)

Team Lead ([Project Altair](#))

- Managed a team of over 75 undergraduate students.
- Built a whole new rover from scratch while managing to get sponsored by 10+ companies.
- Achieved top places in ERC-2023 On-Site and Remote Edition with world wide 3rd in the remote edition
- Achieved the ABEx Award for best science task in IRC 2023.
- Fully responsible for the electrical & software architecture of the rover.
- Ensured proper workflow and communication between mechanical, electrical, and software sub-teams making a viable product.