

Sajeeb Kumar Ray

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About Me: I am Sajeeb Kumar Ray, a passionate student, researcher, and leader with expertise in engineering, technology, and innovation. I strive to make a meaningful impact through research, competitive programming, and community engagement.

Research Interests: Computer Vision, Image Processing, Natural Language Processing, Machine Learning, Deep Learning, Embedded Systems, Internet of Things.

i. Research

10. Deep Learning Based Lung Image Segmentation Using XR-U-Net; **SK Ray**, A Islam, MC Chanda, N Islam, MA Hossain and Mirza AFMRH; ([Accepted in ICCIT-2024](#)).
9. Vehicle Classification and Detection Using YOLOv8: A Study on Highway Traffic Analysis; N Islam, **SK Ray**, MA Hossain and Mirza AFMRH; ([Accepted in ICRPSET-2024](#)).
8. Generating Bangla Image Captions with Deep Learning Techniques; MA Hossain, **SK Ray**, N Islam and Mirza AFMRH; ([Accepted in STI-2024](#)).
7. **SK Ray**, MA Hossain, N Islam and Mirza AFMRH; Enhanced Plant Health Monitoring with Dual Head CNN for Leaf Classification and Disease Identification ([Under Second Revision in Elsevier Journal](#)).
6. Embedded Systems-Based AC Device Controller; Alamin, **SK Ray**, MA Hossain, Mirza AFMRH, N Islam and MM Arman; ([Accepted in ICRPSET-2024](#))
5. Security Circuit Integrated with Industrial Process Controller; **SK Ray**, T Debnath, N Islam and MA Hossain; Universal; ([Submitted in International Conference](#)).
4. Freshness Detection of Fruits and Vegetables Using Multi-Task CNN and ResNet-50; **SK Ray**, MA Hossain, N Islam, Alamin and Mirza AFMRH; ([Submitted in MECS-Press Journal](#)).
3. Understanding the Traffic Sign through a Deep CNN Architecture for Enhanced Traffic Safety; N Islam, **SK Ray** and MA Hossain; ([Under Review in Elsevier Journal](#)).
2. IoT-Based Smart Product Price List Display Board; Alamin, T Debnath, **SK Ray**, MA Hossain and N Islam; ([Submitted in International Conference](#)).
1. Enhanced human activity recognition through deep multi-layer perceptron on the UCI-HAR dataset; MA Hossain, **SK Ray**, N Islam, Alamin and Mirza AFMRH; ([Accepted: <http://doi.org/10.11591/ijaas.v13.i2.pp429-438>](#)).

ii. Educational Qualifications

B.Sc. 2025 Bachelor of Science (Engineering) from Department of Information and Communication Engineering (ICE), Pabna University of Science and Technology, Bangladesh. Degree Expected: June 2025
CGPA: 3.88 out of 4.00 (six semesters, 1st out of 41 students)

HSC 2019 Higher Secondary School Certificate from Collectorate School and College Rangpur (CSCR), Rangpur.

Group: Science Board: Dinajpur GPA: **5.00 out of 5.00**

SSC 2017 Secondary School Certificate from Jaldhaka Government Model Pilot High School (JGMPHS), Jaldhaka.

Group: Science Board: Dinajpur GPA: **5.00 out of 5.00**.

iii. Programming Skills

- ✦ **Competitive Programming** ➤ **Top rating 4★ (1816) on CodeChef** [↗](#)
Specialist (1492) on CodeForces [↗](#)
- I solved over 750 Programming Problems in different online judge such as **CodeForces, HackerRank** [↗](#), **beecrowd (URI)**.
- ✦ **Languages** ➤ **Python, C++, R, MATLAB, Java, C, CSS, HTML, JavaScript, PHP, SQL, MySQL, Arduino.**

iv. Embedded System & Robotics Projects

AI Baby Nursing Robot An automated baby rocker capable of classifying baby cry to understand baby's needs. It can provide some necessary information such as Gas leakage, Smoke detection, and Temperature, Humidity and CO level of the home environment. (Partial Contribution)

Infant Monitoring System A low-cost, mobile-based system was proposed to monitor infants in the workplace. The system uses IoT devices and real-time video transfer to monitor infants and detect safety hazards.
Hardware: **ESP32, ESP32 CAM, GSM Module, Sensor: PIR, DHT11, MQ-2 etc.** Programming: **Arduino, JavaScript, HTML, CSS and XML**

RC Plane Radio Controlled Airplane for Safety Surveillance and Transportation. My role in this project was to debug the mistakes and help teammates to work. Other members are **ALAMIN** and **Gulam Mustofa**.
Hardware: **Transmitter, Receiver, Servo Motor, BLDC motor**, etc.

v. Volunteering

- ✦ **Vice President** [↗](#) (Oct-2024 to Present), Solver Green skill development club. My role focuses on encouraging students to pursue research opportunities.
- ✦ **Class Representative** (Feb-2022 to Present), Department of Information and Communication Engineering.
- ✦ **Founding Member** (Nov-2024 to present), PUST Carrier and Entrepreneurship Club. The club aims to bridge the gap between industry and students' academic life.
- ✦ **District PR Manager** (Mar-2022 to Feb-2023), Pabna in ICT Olympiad Bangladesh.



vi. Computer Skills

- ✦ Research: **CNN, RNN, LSTM, Pytorch, Tensorflow, Pandas, Numpy.**
- ✦ **PCB Design, Circuit Design, Clean Coding.**
- ✦ **MS Word, MS Excel, MS PowerPoint.**
- ✦ Operating System: **Windows, Linux.**
- ✦ Software: **Adobe Photoshop CC, Adobe Illustrator CC, Proteus 8 Professional, Xampp, VS Code, VR Box, Arduino, mikroC, PICKit, MS SQL Server, etc.**
- ✦ Typing Speed: **40 WPM (English).**

vii. Certifications

- ✦ [Advanced Learning Algorithms \(Coursera\)](#)
- ✦ [Supervised Machine Learning: Regression and Classification \(Coursera\)](#)
- ✦ [Problem Solving \(Intermediate\) provided by HackerRank](#)
- ✦ [Problem Solving \(Basic\) provided by HackerRank](#)

viii. Achievements

- ✦ **Finalist  (Top 5)**, Disaster Hackathon 2.0
- ✦ **Champion **, Innovation Showcasing-2024
- ✦ **Runner-Up**, ICE Fiesta Programming Contest-2024
- ✦ **Champion**, ICE Fiesta Programming Contest-2023
- ✦ **University Merit Scholarship 2020, 2021, 2022**
- ✦ **Bangladesh 3rd Rank**(Global-350th) on [Codeforces Round 857 \(Div. 2\)](#)
- ✦ **Bangladesh 5th Rank**(Global-123th) on [CodeChef Starters 79 \(Div. 2\)](#)
- ✦ **Bangladesh 4th Rank**(Global-171th) on [CodeChef Starters 49 \(Div. 4\)](#)

ix. Languages Proficiency

- ✦ **Bangla** ✦ Native Language
- ✦ **English** ✦ Have a good command in speaking, listening, reading and writing. English is the instruction medium of B.Sc. (Engineering).

x. Personal information

Father's Name : Ashwini Kumar Ray
Mother's name : Sabitry Ray
Nationality : Bangladeshi
Date of birth : 24-08-2002
Permanent Address : Vill: Shalongram, Post: Balagram, Jaldhaka, Nilphamari, Rangpur, Bangladesh.

xi. Personal Strength

- ✦ A dynamic personality and networking ability.
- ✦ Aesthetic knowledge and creativity.
- ✦ Strong desire for leading an honest life with dignity.
- ✦ Strong ability to maintain for confidential correspondence.
- ✦ Ability to team building and participatory approaches.
- ✦ Ability to work under pressure and target oriented.
- ✦ Ability to keep good relation with co-workers.

I declare that all the information provided here are authentic

xii. References

Prof. Md. Anwar Hossain

Chairman

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(Sajeeb Kumar Ray)