

Punam Chowdhury

Robotics Enthusiast & AI Engineer | Dhaka, Bangladesh
Email: shuvo.punam@duet.ac.bd | Mobile: +880 1749-076238
Linkedin: [linkedin.com/in/shuvoo](https://www.linkedin.com/in/shuvoo) | GitHub: github.com/shuvoooo | Google Scholar

RESEARCH INTEREST

My primary research interest is robotics, embedded systems, and AI. I want to build intelligent autonomous robots for dynamic environments. I focus on sensor integration, strong hardware–software interfacing, and robot communication (MQTT). I use Deep Learning and Computer Vision for real-time perception and decision making. I am also interested in Explainable AI (XAI) for mission-critical application such as security and medical imaging, to improve navigation and intelligent surveillance in real world.

EDUCATION

Indian Institute of Technology (IIT) Kharagpur Kharagpur, India
Professional Certification in Artificial Intelligence and Machine Learning July 2022—Dec 2022

- Selected by a highly competitive exam for government-sponsored "Bangladesh-Bharat Digital Service and Employment Program". [Course Link]
- Focus:** Advanced ML algorithms, Deep Learning architectures, and practical deployment of AI models.

Dhaka University of Engineering & Technology (DUET) Gazipur, Bangladesh
Bachelor of Science in Computer Science and Engineering Oct 2016—July 2021

- Thesis:** An AI-Based Security System Using Computer Vision and NLP Conversion System
- Key Strength:** Highly active in competitive robotics and programming, prioritized practical application and research implementations over theoretical coursework.

Feni Polytechnic Institute Feni, Bangladesh
Diploma in Computer Technology Oct 2011—Dec 2015

- Pursued after high school due to a strong passion for engineering and technology.
- Foundation:** Gained early hands-on experience in hardware, programming fundamentals, and embedded systems.

PUBLICATIONS

- P. Chowdhury**, Co-author. "DeepJurist: A Hybrid Deep Learning Architecture for Detecting Fake Visual Evidence in Judicial Systems." *IEEE Xplore*, 2024. [<https://doi.org/10.1109/ICCIT64611.2024.11022369>]
- P. Chowdhury**, Co-author. "NeuroXAI++: An Efficient X-AI Intensive Brain Cancer Detection and Localization." *IEEE Xplore*, 2023. [<https://doi.org/10.1109/NCIM59001.2023.10212818>]
- P. Chowdhury**, Co-author. "An AI-based Security System Using Computer Vision and NLP Conversion System." *IEEE Xplore*, 2022. [<https://doi.org/10.1109/STI53101.2021.9732565>]
- P. Chowdhury**, Co-author. "MTL-uWQI: An Interpretable Multi-Task Machine Learning Framework for Multi-Use Water Quality Indexing." *Journal Paper, Under Review*, 2025.

PROFESSIONAL EXPERIENCE

Bangladesh Research and Education Network (BdREN) Dhaka, Bangladesh
Senior Software Engineer Dec 2021—Current

- Promoted from Software Engineer to Senior SE within 3 years of joining for outstanding performance where the company benchmark is 5 years.
- Architecting enterprise-level applications involving AI/ML integration for nationwide educational networks which involves real-time data processing and analysis.
- Developed and deployed multiple AI models with user interfaces built using MCP server, integrating sensor data processing and real-time monitoring capabilities for IoT and robotics applications.
- Mentoring junior engineers and leading code reviews to ensure industry best practices.

Texon Limited Dhaka, Bangladesh
Co-Founder & Chief Technology Officer (Part-Time) Dec 2020—Current

- Led the technical strategy and product development roadmap for a software and automation-based startup.
- Designed the MVP hardware-software interface, enabling early market testing and user feedback.

SELECTED RESEARCH PROJECTS

Autonomous Robotics Development | *DUET Robotics Club*

- Developed an autonomous rover capable of traversing uneven terrain using NEO Station 5 over MQTT communication.
- Designed and built multiple competition-grade robots including maze solvers, line followers, and pathfinders with advanced sensor integration and real-time decision-making algorithms.
- Competed internationally at Techfest (IIT Bombay) and Techkriti (IIT Kanpur), securing 2nd Runner-up and 4th position against global teams, alongside 7 championship titles in national competitions.

LEADERSHIP & AWARDS

Leadership Positions

- **President**, DUET Robotics Club: Led a community of 100+ members, organizing workshops and national contests.

Competitive Achievements

- **2nd Runner-up** – International Autonomous Robotics Competition (IARC), Techkriti'18, IIT Kanpur, India.
- **4th Position** – Meshmerize (Maze Solver Robot), Techfest'18, IIT Bombay, India.
- **Champion** – Line Following Robot, Ignition'19, KUET, Bangladesh.
- **Champion** – Path Finder, BUET Robo Carnival'17, BUET, Bangladesh.
- **Champion** – IARC, Techkriti'18 Bangladesh Zonal, UIU, Bangladesh.
- **Champion** – Color Switch, National Robotech Festival'18, NSU, Bangladesh.
- **Champion** – Maze Solving Robot, Makers Mania'18, IUB, Bangladesh.
- **Champion** – Meshmerize, Techfest'18 Bangladesh Round, AIUB, Bangladesh.

Academic Honors

- **Scholarship Recipient**, Bangladesh-Bharat Digital Service and Employment Training (2022).
- **Excellence Award, DUET**, Awarded in the "Innovation & Competition" category for outstanding performance in innovation and competitions in undergraduate studies (2021).

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, TypeScript, PHP, MATLAB.
- **AI/ML:** TensorFlow, PyTorch, OpenCV, Scikit-learn, Keras.
- **Hardware/Robotics:** Arduino, Raspberry Pi, Embedded C, MQTT, ROS, MicroPython, PlatformIO.
- **Operating Systems:** Linux (Ubuntu, Raspbian), Windows, macOS.
- **Databases:** MySQL, PostgreSQL, MongoDB, SQLite, Firebase, Redis.
- **Cloud Platforms:** AWS, Google Cloud Platform, Microsoft Azure
- **Web & Tools:** Docker, Git, Django, React, Node.js, RESTful APIs, Agile Methodologies.

REFERENCES

Debasis Samanta, Professor, Department of Computer Science and Engineering, Indian Institute of Technology (IIT) Kharagpur, India.

Email: dsamanta@cse.iitkgp.ac.in | Phone: +91 94340-08349 | Website: cse.iitkgp.ac.in/~dsamanta

Md. Amran Hossain, Professor, Department of CSE, Dhaka University of Engineering & Technology (DUET), Gazipur, Bangladesh.

Email: amran.cse@duet.ac.bd | Phone: +880 1716-158271 | Website: profile.duet.ac.bd/u/amran.cse

Khandakar Rashedul Arefin, General Manager, Bangladesh Research and Education Network (BdREN), Dhaka, Bangladesh.

arefin@bdren.net.bd | Phone: +880 1711-082754 | LinkedIn: [linkedin.com/in/rashedularefin](https://www.linkedin.com/in/rashedularefin)

Sumaya Kazary, Assistant Professor, Department of CSE, Dhaka University of Engineering & Technology (DUET), Gazipur, Bangladesh.

Email: sumaya@duet.ac.bd | Phone: +880 1712-272961 | Website: profile.duet.ac.bd/u/sumaya