

# Rajit Palit Atri



📍 Chattogram, Bangladesh

Power Systems | Smart Grid | Renewable Energy | ML for Energy Systems

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## Objectives

Motivated Electrical and Electronic Engineering graduate seeking a PhD position in Power Systems, Smart Grids, Microgrids, and Renewable Energy Integration, with a focused interest in applying machine learning and data-driven optimization to modern energy challenges.

## Education Background

B.Sc. in Electrical and Electronic Engineering | September 2024

Department of Electrical and Electronic Engineering, American International University–Bangladesh (AIUB)

Thesis Title: *Design and Implementation of an Image Processing-Based Water Meter Reading System*

Result: CGPA 3.83/4.00 (Graduated with Distinction; Dean's Award Recipient; Best Poster Award – Final Year Thesis Presentation)

## Honors & Awards

1. **Dean's Award** | Academic Excellence | 2022 | [Link](#)
  - Awarded by the AIUB for outstanding academic achievement in the undergraduate program.
2. **Best Poster Award** | Final Year Thesis Presentation | 2024 | [Link](#)
  - Recognized by the Department of EEE, AIUB for excellence in research presentation and innovative project work.

## Teaching and Mentoring Experience

1. Science Tutor | Private | Chattogram, Bangladesh | 2024 – Present
  - Provide individualized instruction to secondary-level students (Classes 8–10) in Science, Mathematics, and Physics.
  - Emphasize conceptual understanding, analytical reasoning, and problem-solving techniques to enhance academic performance.
2. Peer Mentor | Department of EEE, AIUB | 2022 – 2024
  - Supported junior students with theoretical and practical concepts in Mathematics, Physics, and Basic Electrical Circuits. Assisted with assignments, circuit design tasks, and technical presentations to promote collaborative learning and academic improvement.

## Working Experience

**Intern Engineer** | Zodiac Power Chittagong Ltd. | 2024 | [Link](#)

- Assisted in the operation and analysis of engine auxiliary systems, including HFO and LO circuits, HT–LT cooling systems, boilers, and turbines.

- Interpreted single-line diagrams and evaluated transformer ratings to support system understanding and operational planning.
- Developed practical insight into large-scale power generation processes, contributing to a deeper understanding of plant operation and energy system behavior.

## Research Experience

**Research Assistant** | 2024–ongoing

Under: Supervision of **Amirul Islam**, *Assistant Professor, Department of Electrical and Electronic Engineering, BRAC University*

- Conducted structured literature reviews and analytical assessments that informed problem definition and research direction.
- Contributed to the organization of academic manuscripts by refining methodology sections, improving argument flow, and enhancing technical clarity.
- Identified key technical insights from published work and supported the development of conceptual and methodological research frameworks.

## Research Skills

### Power & Energy Systems Tools

- MATLAB/Simulink
- PSCAD
- Multisim
- Proteus
- AutoCAD Electrical

### Machine Learning & Data-Driven Modeling

- Python (NumPy, Pandas, scikit-learn)
- TensorFlow / Keras
- OpenCV
- Deep Learning models for feature extraction, classification, and prediction

### Circuit Design & VLSI Tools

- Cadence Virtuoso
- Active-HDL
- Digital & analog circuit design and simulation

### Programming & Technical Computing

- Python
- C / C++
- Arduino / Embedded C
- Scripting for automation and simulation

### Research, Documentation & Analysis

- Academic writing, literature review, and paper development
- Data analysis & performance evaluation
- LaTeX, MS Office, PowerPoint, Adobe Illustrator

## Scientific Activities

## 1. Published Articles

**IEEE Conference Paper | 2024 | [Link](#)**

R. V. Biswas, R. Sultana, M. I. Ishrak, **R. P. Atri**, and M. H. Ahanaf, “An 87.25 dB Open-Loop Gain, 2.09 GHz Unity Gain Bandwidth 3-Stage Operational Amplifier Implemented Using 45 nm Technology,” ICEEICT 2024, Dhaka, Bangladesh, pp. 1461–1466.

**Undergraduate Thesis / Capstone Project | 2024 | [Link](#)**

Developed an image-processing-based water meter reading system using Python, OpenCV, and OCR, incorporating segmentation and feature extraction techniques to automate digit recognition and improve the accuracy of consumption monitoring.

## 2. Trainings

- Modeling and Performance Analysis of Hybrid Energy Systems Using PSCAD Software | ESAB, AIUB | October 2023 | [Link](#)
- Basic Safety Training | Samsung C&T Safety Academy | August 2022 | [Link](#)
- Professional Solar PV System Design | ESAB, AIUB | October 2021 | [Link](#)

## 3. Workshops

- Fundamentals of Arduino | AIUB | February 2022 | [Link](#)
- Writing Research Paper for Journal Publication | AIUB | February 2022 | [Link](#)
- Industrial Automation Project and Career | AIUB | October 2022 | [Link](#)

## 4. Seminars / Webinars

- Offshore Wind Energy: From Wind Turbines to Wind Farms | December 2023 | [Link](#)
- Progress and Stability Enhancement of Hybrid Perovskite Solar Cells | August 2023 | [Link](#)
- Prospect and Challenges of Fourth Industrial Revolution | November 2022 | [Link](#)
- Introduction to the VLSI Industry | AIUB | September 2022 | [Link](#)
- Nanotechnology and the Fourth Industrial Revolution | AIUB | August 2022 | [Link](#)

## 5. Courses & Certifications

- Python, Machine Learning & Deep Learning | Mahdy Research Academy | 2025 | [Link](#)
- AutoCAD Certificate | Gobeshona Learning Academy | 2025 | [Link](#)
- Mastering Literature Review & Research Topic | Research Expert | August 2025 | [Link](#)
- Online Safety | GP Academy | February 2024 | [Link](#)

## Leadership and Extracurricular Activities

1. **Executive Member & Lead Graphic Designer** | Engineering Students' Association of Bangladesh (ESAB), AIUB Unit Face | 2022 – 2024 | [Link](#)

Organized university-level seminars, workshops, and competitions while **leading all graphic design tasks**, including promotional materials and event branding. Coordinated logistics and communication with cross-functional teams.

2. **Volunteer & Graphic Design Coordinator** | 3rd & 4th International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST), AIUB | 2023 & 2024 | [Link](#)

Assisted the organizing committee with conference design, media preparation, and session coordination. Designed official posters and visual templates, supporting a professional academic environment and gaining strong teamwork and event management experience.