Curriculum Vitae

DIPAYAN BHADRA

House 11, Mollika R/A, Milk Vita Road,
Mirpur, Section 7, Dhaka 1216, Bangladesh
Mobile No: 0088-01911-604728
E-mail: dipu_dipayan@outlook.com

https://orcid.org/0009-0004-9844-3607
https://scholar.google.com/citations?user=XXtLbdQAAAAJ&hl=en

RESEARCH INTEREST

Artificial Intelligence, IoT and edge computing, evolutionary algorithms: genetic algorithms, neural networks and training algorithms, signal processing: image processing, speech processing and biomedical signal processing, time series analysis and forecasting.

EDUCATION

Masters in Applied Statistics and Data Science
Jahangirnagar University, Savar, Dhaka
Graduated: 2025; GPA: 4.00/4.00
Relevant Courses: Sampling Methodology, Introduction to Data Science with Python, Probability and Probability Distributions, Multivariate Analysis, Applied Regression Analysis, Research Methodology, Statistical Inference, Time Series Analysis and Forecasting, Big Data, Machine Learning for Data Science, Data Mining, Project Report

Master of Science in Electrical and Electronic Engineering (Major in Electronics and Communication)
Bangladesh University of Engineering and Technology (BUET), Dhaka
Graduated: January, 2019; GPA: 3.50/4.00
Relevant Courses: Image processing, Speech processing, Broadband Wireless Communication, Biomedical Signal Processing, Advanced VLSI design, Carbon Nanotechnology.

Bachelor of Science in Electrical and Electronic Engineering
Khulna University of Engineering and Technology (KUET), Khulna
Graduated: April, 2010; GPA: 3.58/4.00

Higher Secondary Certificate (H.S.C.) in Science
Notre Dame College, Dhaka
GPA: 4.90/5.00, Completed: 2005

Secondary School Certificate (S.S.C) in Science
Monipur High School (Branch-1), Mirpur, Dhaka
GPA: 5.00/5.00, Completed: 2003

PROFESSIONAL EXPERIENCE (July 2010 – till now)

Executive Engineer (May, 2021 to till now)
Telecom and Remote Terminal Unit Division-1, Dhaka, Power Grid Bangladesh PLC

- Serving as a departmental head for the operation and maintenance of fiber optic telecom equipment, NMS, RTU, optical fiber, phone (ATS, OTS) system of 71 grid substations and power stations, integrated 11 new substations to the telecom network of Power Grid Bangladesh.
- Achieved 99.74% availability of SCADA Data, SCADA operation, tele-protection, and voice communication. Implemented back-up optical link and high bandwidth channels for backup NLDC.
- Additional Achievements: drafted Cyber security policy for Power Grid, integrated a weather station for load forecasts, introduced CPE based solution for no-fiber situation, developed smart DC system monitoring and control system.

Sub-Divisional Engineer (Nov, 2020 to May, 2021)
Telecom and RTU Division-2, Dhaka, Power Grid Bangladesh PLC

- Managed emergency operation and maintenance of TE, RTU, Phone, and Fiber of 19 stations to ensure 99.20% availability of SCADA Data, Tele-operation, tele-protection, and voice communication.
- Integrated new fiber optic telecom equipment in three power plants as a telecom expert and committee member. Established a new optical path between two major power plants at Ghorasal and Ashuganj.

Sub-Divisional Engineer (Mar, 2017 to Nov, 2020)
Project Planning, Power Grid Bangladesh PLC

- Prepared 9 project proposals for government approval and implementation including Nuclear power evacuation and 765kV transmission Line under EDCF, WB, ADB, AIIB and LOC India funding.
- Analyzed financial and economic viability, estimated cost of development projects and technical assistance projects, prepared amortization schedules,
- Prepared progress reports of the on-going projects and compiled budget requirement of projects
- Generated reports and attended load negotiation meetings with development partners.
- Drafted TORs for the supervision consultants under the projects.

Assistant Engineer (May, 2012 to Mar, 2017)
Project Planning, Power Grid Bangladesh PLC

- Prepared 14 project proposals for government approval and implementation under ADB, WB, KfW and JICA funding.
- Carried out similar responsibilities to the Sub-Divisional Engineer role focusing on project planning and progress report generation.
- Developed automated spreadsheet files for efficient progress report generation.

Lecturer (Oct, 2011 to May, 2012)
Department of EEE, Bangladesh University of Business and Technology (BUBT),

- Taught and evaluated students; Organized online gaming contests within departments.

Lecturer (Oct, 2010 to Oct, 2011**)**
Department of EEE, Prime University,

- Taught and evaluated students; Assisted in revising the departmental syllabus

Game Programmer (Intern) (July, 2010 to Oct, 2010)
Kento Studios, Uttara, Dhaka. Developed 2D games using the torque2D game engine

TEACHING EXPERIENCE:

- **Adjunct Faculty** (October, 2023 – Present)
  Department of Computer Science Engineering, East West University, Dhaka-1212
  Major Responsibilities: Teaching, conducting classes, and evaluating students
  Conducted courses: ICT Project Management, Electronic Circuits, Statistics for Data Science Lab
- **Adjunct Lecturer** (2013 to 2020)
  Department of EEE, Bangladesh University of Business and Technology (BUBT)
  Major Responsibilities: Teaching, supervising thesis, conducting classes and evaluating students
  Conducted Courses: Numerical Analysis, Engineering Electromagnetic, Continuous Signals and Linear Systems, Energy Conversion I, Power Plant Engineering, Power System I & II, Communication System Engineering, Optical Fiber Communication, Physics,
- **Lecturer** (Oct, 2010 to May, 2012)
  Dept of EEE, Prime University and BUBT
  Conducted Courses: Circuit Theory, Control System, Engineering Electromagnetic, Electronics II

RESEARCH EXPERIENCE

- **POSTGRADUATE THESIS**
  "*Hybrid Deep Learning Model for Daily Maximum Electricity Demand Forecasting of Power Grid*" in 2025.
  Supervisor: Dr. Rumana Rois, Professor, Department of Statistics and Data Science, JU.
  Summary: Developed a hybrid model combining Concatenated CNN, and residual LSTM network architecture for daily electricity demand forecasting which provides superior forecasting capability over the base and hybrid statistical models and deep learning models.

  "*Bangla Handwritten Character Recognition Using Deep Convolutional Neural Network*" in 2019
  Supervisor: Dr. S. M. Mahbubur Rahman, Professor, Department of EEE, BUET.
  Summary: Developed CNN architecture for 50 classes problem of Bangla HCR, achieved unprecedented accuracy of 91.25% on test dataset considering the dataset size, number of classes, and problem complexity.

- **UNDERGRADUATE THESIS**
  "Disease Diagnose and Logic Circuit Optimization using Genetic Algorithm", in 2010
  Supervisor: Dr. Md. Shahjahan, Professor, Department of EEE, KUET
  Summary: Compared the performance of simple GA and microbial GA in the training of neural networks for disease diagnosis. Moreover, introduced Logical Neural Network (LNN) as an encoding technique for combinational logic circuit design and optimization using modified simple GA.

- **THESIS SUPERVISION**
  Supervised two undergraduate theses on **Speech Recognition Using Neural Network**, and **Original Signal Reproduction from Multi-Channel Noisy Observation**

PUBLICATIONS

- Md Kabir, Dipayan Bhadra, Moinul Ridoy, and Mariofanna Milanova. 2025. "**LSTM–Transformer-Based Robust Hybrid Deep Learning Model for Financial Time Series Forecasting**" Sci 7, no. 1: 7. https://doi.org/10.3390/sci7010007
- Dipayan Bhadra, Mehrab Hossain, Fatema Alam, **"Deep Feed-Forward Neural Network For Bangla Isolated Speech Recognition",** Journal of Nazrul University ISSN: 2227-5940, Number 1&2, 2024. https://doi.org/10.48550/arXiv.2507.07068
- Dipayan Bhadra, Mehrab Hossain, Fatema Alam**, "Speaker Independent Bangla Isolated Speech Recognition Using Deep Neural Network",** International Conference on Technology, Business and Justice towards Smart Bangladesh, ICBJT-June, 2023 (Achieved Best Paper Award in Professional Category) https://doi.org/10.5281/zenodo.15795483
- Dipayan Bhadra, Tanvir Ahmed Tarique, Sultan Uddin Ahmed, Md. Shahjahan, Kazuyuki Murase, "**An Encoding Technique for Design and Optimization of Combinational Logic Circuit**", 13th International Conference on Computer and Information Technology (ICCIT), 2010. DOI: 10.1109/ICCITECHN.2010.5723860
- Tanvir Ahmed Tarique, Dipayan Bhadra, Sultan Uddin Ahmed, Md. Shahjahan, Kazuyuki Murase, "**A Comparative Study of Genetic Algorithm and Microbial Genetic Algorithm for Classification problems**", poster paper at 13th International Conference on Computer and Information Technology (ICCIT), 2010.

IoT, ELECTRONIC and RESEARCH PROJECT IMPLEMENTATION

- Bangla Sentiment Analysis using Ensemble of CNN-LSTM Hybrid and Transformer Model
- Implementation of a serial program loader circuit for 8051 (ATMEL 89C51ED2) microcontroller
- Design and implementation of a line follower robot using ATMEL 89C51ED2 microcontroller
- Visitor counter with LCD display output using AVR AtMega16A
- Water pump automation and home automation (using Arduino and Son-off systems)
- Android app based voice controlled wheel-chair using Arduino
- Smart control and monitoring of substation DC system (Implemented in a 132/33 kV Grid Substation)

SKILLS

- **Programming Languages :** Python, R, Turbo C, C++, CUDA C, FORTRAN, Assembly
- **Engineering Analytical Tools :** MATLAB, SPSS
- **Machine Learning Framework :** Tensorflow, PyTorch, Spark MLlib
- **Hardware & IOT Programming :** Atmel 8051, AVR/PIC/AtMega, Arduino, RaspberryPi, ESP32, Assembly programming for Intel 8085, 8086
- **Computer and Networking :** LAN, WLAN, SDH & PDH configuration, TCP/IP protocols, RedHat Linux-based server design, CPE based Network
- **Mathematics and Statistics:** strong problem-solving and reasoning ability (stood 2nd in math Olympiad at college) using statistics and probability, calculus, numerical analysis, linear algebra, geometry

LANGUAGE PROFICIENCY

- **English**: Advanced (Duolingo: CEFR C1), the language of instruction was English in B.Sc. and M.Sc.
- **Bengali:** Fluent (Native language)

PRIZES AND SCHOLARSHIPS

- Certificate of appreciation for the implementation of innovative idea "Smart monitoring and controlling of substation DC system" at 132/33 kV substation of Power Grid of Bangladesh
- Achieved Technical Scholarship from university throughout the four years of bachelor degree for excellent results at undergraduate level
- Participated in the Inter College Math Olympiad and stood 2nd position
- Scholarship from Dutch-Bangla Bank Ltd. In the Higher Secondary level
- Junior scholarship from Govt. of the people's republic of Bangladesh

EXTRA CURRICULAM

- Was an Executive Member of KUETRONICS (an electronics club at KUET)
- Worked as class representative during 2009-2010 at university (KUET)
- Was an active member of Notre Dame College Science Club

TRAINING

SL.No	Name of Training	Time Duration	Organization
01	Clean Energy Integration	3 - 7th June, 2024	US Energy Assocation, Pacific Nortwest National Laboratory (PNNL), Funded by US dept of State
02	Cyber Security Training for CII Officials	21 -25th April, 2024	Cyber Range, Military Institute of Science and Technology, Dhaka
03	CISCO Certified Network Associate (CCNA) Course	20th Aug - 19th Oct, 2022	IBCS-PRIMAX Software (Bangladesh) Ltd, Dhaka
04	Redhat Certified Engineer V8	11th Dec 2021 - 26th Feb 2022	IBCS-PRIMAX Software (Bangladesh) Ltd, Dhaka
05	Project Management Training	16Th Nov - 1st Dec 2019	Institution of Online Education Beijing Foreign Studies University
06	Financial & Economic Analysis of Development Project	16th - 18th April 2019	Bangladesh Power Management Institute
07	Project Management	18th - 22nd Feb 2019	Asian Institute of Technology, Thailand
08	Introduction to Smart Grid & Fundamentals of Power System	14th - 15th Oct 2018	Bangladesh –Japan Training Institute
09	Project Management	15th - 26th Jan 2018	Asian Institute of Technology, Thailand
10	System Engineering and Design including Application of HVDC Systems	9th – 22nd May 2017	SIEMENS, Erlangen, Germany
11	Training of Design of Tower & Foundation	20th - 30th April 2014	KEC International Limited, Bangladesh
12	Project Feasibility And Appraisal Study	10th - 22nd Aug 2013	United States Agency and International Development(USAID)
13	Project Formulation Appraisal And	24th Nov - 12th Dec 2013	National Academy For planning and Development
14	Training Design of Tower & Foundation	5th - 16th May 2013	KEC International Limited, Bangladesh
15	Computer Aided Project Management	24th - 27th Sept 2012	Engineer Staff College, Bangladesh (ESCB)
16	Industrial Training on Power Generation , Distribution & S/S	10th - 22nd Aug 2009	Rural Electrification Board, Dhaka

REFERENCES

Dr. Rumana Rois
Professor and Chairman
Department of Statistics and Data Science
Jahangirnagar University, Savar, Dhaka-1342,
Bangladesh.
Email: rois@juniv.edu
Phone: 0088-01904709211

Md Maksudur Rahman Bhuiyan
Superintending Engineer
Communication Circle,
Power Grid Bangladesh PLC
NLDC Complex, Avenue-3, Jahurul Islam City,
Aftabnagar, Badda, Dhaka-1212
Email: se.communication@pgcb.gov.bd
Phone: 0088-01730016049

Dr. S. M. Mahbubur Rahman,
Professor,
Department of Electrical & Electronic Engineering
Bangladesh University of Engineering & Technology
Palashi, Dhaka, Bangladesh
E-mail # mahbubur@eee.buet.ac.bd

Dr. Md. Shahjahan
Professor,
Department of Electrical & Electronic Engineering
Khulna University of Engineering & Technology
Khulna-9203. Dhaka-1000, Bangladesh
Phone # 0088-01912251993
E-mail # mdjahan8@yahoo.com

DECLARATION

The undersigned do hereby declare & ensure that the particulars provided above & in previous pages are correct & represents myself in terms of qualifications and social standings.

Date: 10th October, 2025

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(Dipayan Bhadra)