

Nafis Faisal

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EDUCATION

Bangladesh University of Engineering and Technology *Dhaka, Bangladesh*
Bachelor of Science *February 2020 - March 2025*
Department of Electrical and Electronics Engineering *(3.90 in the last semester) CGPA: 3.66/4.00*
Majoring in Communications and Signal Processing (CSP)

Notre Dame College *Dhaka, Bangladesh*
Higher Secondary Certificate *June 2017 - 2019*
Science Group, English Version *GPA: 5.00/5.00*

INTERESTS

- AI, Machine Learning and Deep Learning
- Quantum Error Correction
- Signal Processing
- Robotics & Automation
- Quantum Computing
- Control Systems

TECHNICAL SKILLS

Programming Languages	C/C++, Python, MATLAB, Arduino IDE
Markup Languages	LaTeX, HTML
Machine Learning Libraries	Pandas, Scikit-learn, TensorFlow, Pytorch, Keras
Software & Coding Environment	Microsoft Office (Word, Excel, Powerpoint), AutoCAD, Mission Planner, PSpice, Proteus, Codeblocks
Hardware	Arduino microcontroller, Arducopter, IoT devices, sensors

RESEARCH EXPERIENCE

Sparse Electric Load Dataset Reconstruction and Forecasting *February 2024 - Present*
Supervised by Dr. Hafiz Imtiaz *Bangladesh University of Engineering and Technology*

- Using Machine Learning and other techniques to reconstruct the sparse load dataset of the BUET electric power plant and predicting future loads by learning from the dataset

Undergraduate Thesis titled "Performance analysis of extension of 3- and 5-bit Quantum Repetition Code" *November 2023 - March 2025*
Supervised by Dr. Saifur Rahman *Bangladesh University of Engineering and Technology*

- Investigated into an extension of the traditional decoder circuit or 3- and 5-bit Quantum Repetition Codes on tri- and pentapartite GHZ states

PROJECTS

Undergraduate Lab Projects

Real-time human detection, tracking with geographical localization in flood-affected regions using drone *Level 4, Term 2*
Supervised by Dr. Celia Shahnaz *Bangladesh University of Engineering and Technology*

- Built a quadcopter drone to detect and locate humans from above in flooded regions using a fine-tuned YOLO

Bangla Calendar Clock 3.0

Level 4, Term 1

Supervised by Dr. Sajid Muhaimin Choudhury *Bangladesh University of Engineering and Technology*

- Implemented a Bangla Calender Clock showing Bangla calendar date and time along with English calendar date and time in Bangla alphabets and numerals. The system also had automatic time synchronization in case of power failure without internet connection
- [Github link](#)

Facial Expression Classification using Deep Learning

Level 4, Term 1

Supervised by Dr. Shaikh Anowarul Fattah *Bangladesh University of Engineering and Technology*

- Reimplemented the machine learning model from a journal paper title "Facial Expression Recognition Using Multi-Branch Attention Convolutional Neural Network" by Yinggang He, slightly changed some parameters to gain a slightly higher accuracy
- [Github link](#)

Solar based UPS with Voltage Level Control, Battery Level Indicator and Auto Cut-off Level 3, Term 2

Supervised by Ramit Dutta

Bangladesh University of Engineering and Technology

- Building a solar charged inverter system with battery pack, voltage controller and indicator with battery management system for avoiding overcharge or unbalanced charging

Password based Security Lock System with Anti-Fraud Alarm

Level 3, Term 2

Supervised by Dr. Hamidur Rahman

Bangladesh University of Engineering and Technology

- Using various digital electronic ICs to implement a security lock with alarm

Load Forecasting using parallel CNN and LSTM Architecture

Level 3, Term 1

Supervised by Dr. Nasim Ahmed Dewan

Bangladesh University of Engineering and Technology

- Reconstruction and load forecasting on BUET Load Dataset using CNN-LSTM and LSTM models
- This project was later pursued for further research, as mentioned in the research section

Sampling and Reconstruction of a signal using electronic Integrated Circuits (IC's) Level 3, Term 1

Supervised by Dr. Saifur Rahman

Bangladesh University of Engineering and Technology

- Applying knowledge of electronic circuits and components to implement sampling or time-axis discretization of an analog signal and reconstructing it to original signal using filters

Extracurricular Projects

Assistive Robot

July 2023 - September 2023

Supervised by Dr. Mohammad Ariful Haque

Bangladesh University of Engineering and Technology

- Generated possible prompts and their replies from ChatGPT for robot
- Designed a preliminary version of the robot "eyes" using dot matrix

WORK EXPERIENCE

Tutoring and related experience

Tutored high school students in mathematics, physics and chemistry

November 2019 - Present

Worked in content creation and translation for a reputed academic coaching center

Non-academia publication experience

Published book as co-author titled "[Onnyo Chokhe Calculus](#)"

Published in 2024 Ekushe Boi Mela

Internship experience

Industrial attachment at Fiber@Home

June 2024 - July 2024

ACADEMIC AND EXTRACURRICULAR ACHIEVEMENTS AND SCHOLARSHIPS

Academic

Government Board Scholarships in JSC and HSC

Perfect attendance certificate at Notre Dame College

Self Learning

Attended course to learn Quantum mechanics (72nd name on [this site](#))

Attended course to learn Machine Learning and Deep Learning

Completed several courses on Programming, Machine Learning and Mathematics in Coursera and Kaggle

Competitions

Acquired 1st position in Intra University Undergraduate Integration Olympiad held in 2020

Acquired 8th position in Intra BUET Undergraduate Math Olympiad held in 2022

Acquired 6th position in Intra BUET Nuclear Engineering based Poster Presentation held in 2023

Acquired 1st position in Matlab Mania Contest, KUET EEE DAY 2023

Acquired 1st position in Intra BUET Undergraduate Math Olympiad held in 2023

Seminar and Conference

Attended and presented project at IEEE WIE Robotics for Climate Change and Assistive Technology competition by IEEE RAICON 2024

Non-academic

Vice President (initially Assistant General Secretary) at "Kantho-BUET" (recitation club of BUET)

REFERENCES

Dr. Saifur Rahman, Thesis Supervisor

Professor, Department of EEE,

Bangladesh University of Engineering and Technology

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