NAZMUS SAAD LAMIM

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EDUCATION

Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

B.Sc. in EEE (Majored in Communication and Signal Processing)   June, 2024

GPA: 3.71 / 4.00

RESEARCH INTERESTS

- Next Generation Wireless Technologies and Applications
- Network Architectures
- Signal Propagation, Antenna and Associated Systems
- AI in Wireless Communication
- IoT Systems

RESEARCH EXPERIENCE

Undergraduate Student Researcher   July'23 – June'24
Department of EEE, BUET

Joint Pilot Assignment And Pilot Power Allocation For Cell-Free Massive MIMO
- A joint pilot assignment and pilot power control scheme which assigns pilots and allocates power to the pilots jointly. It is achieved via optimizing the derived closed form expression for NMSE. This scheme performs better than full power pilot assignment technique.

ENGINEERING EXPERIENCE

Industrial Attachment   November, 2023
Bangladesh Betar (State-owned Radio Broadcaster of Bangladesh)

ACADEMIC AWARDS

Dean's List Scholarship (4.00/4.00 in term 4-1)   In Final Academic Year
- Awarded for having CGPA 3.75 or higher in an academic year

University Merit Scholarship   In Final Academic Year
- Awarded for being in the top 10% of the class

Board Scholarship (Talentpool)   HSC, SSC, JSC, PECE
- Awarded by the Government of Bangladesh

RELEVENT COURSES

- Signals and Systems
- Communication System
- Random Signals and Processes
- Optical Communications
- Radar and Satellite Communication
- Digital Signal Processing
- Control System Engineering
- Microwave Engineering
- Wireless Communications

RELEVENT SKILLS

- *Modeling & Simulation:* Simulink, PSPICE, PSAF, Quartus, ModelSim, Ansys FTDT, AutoCAD
- *Programming Languages:* C/C++, MATLAB, Python, System Verilog
- *Optimization Software and solvers:* AMPL, Knitro
- *Hardware Skills:* Arduino, STM32F466RE, FPGA
- *Documentation Skills:* Overleaf (Latex), Microsoft Office, Microsoft Excel

NOTABLE PROJECTS

▪ *VOIS: Video Over Intercom System*

A low-cost, AI-powered video intercom system that integrates advanced features such as voice communication, live video streaming, face recognition, smart door lock control, and emergency SOS functionalities.

▪ *Implementation of a Mobile Phone Using STM32F446RE Microcontroller*

This project mainly demonstrated the use of the STM microcontroller, where a mobile phone was built, which uses the controller as the processor and can send and receive texts and calls.

▪ *Design and Analysis of a Circular Patch Antenna*

A patch antenna was designed and simulated in Ansys. The analysis showed return loss and antenna gain at different frequencies, radiation pattern was shown too.

▪ *Intelligent Traffic Control System*

The complex traffic of a four-way junction was modeled using LED and ModelSIM-altera board. The system was automated and it controlled the traffic using state-machine algorithm.

▪ *Complete Electrical Service Design of a Building*

A complete electrical service from power supply to the end-point device, different ground, floor and roof plan is designed with exact power rating in AutoCAD.

▪ *A three-level boost converter*

A three level boost converter, which delivers higher voltage conversion efficiency, lower inductor current ripples, output voltage ripples and voltage stresses on switches when compared with the conventional boost converters.

▪ *Human Follower Shopping Cart*

A simple shopping cart, which can detect objects and have controlled forward and backward movement with speed control. We have used Pixycam for vision.

▪ *Transient Stability Analysis of a Power System*

We have taken a multi-machine system simulation to demonstrate the features and scope of a Simulink based model for transient stability analysis. An integral model has been illustrated with its complete details along with a few practical solutions for obtaining stability.

▪ *AC Signal Modifier*

A Graphical User Interface (GUI) which can take any kind of input signal and can clip, clamp or regulate it. It also shows the circuit diagram required and the output signal.

▪ *Electricity Bill Reduction Of A Garments Factory By Proper Correction Of Power Factor*

Modeling the electrical loads, power factor is continuously monitored in this project. An appropriate capacitor bank and its timely disconnection are ensured to keep the power factor always above 0.95.

LANGUAGES

Bengali	Native Proficiency
English	Proficient

COMMUNITY Experience

▪ **Member,** BADHAN- A Voluntary Blood Donors' Organization	2021 – 2024
▪ **Member,** IEEE BUET Student Branch	2021 – 2022
▪ **Organizer,** Name Day Ceremony of Batch-18, Rashid Hall, BUET	October'22