Md Samiul Islam Sagar

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Education

Washington State University — *Vancouver, WA-98686*

Master of Science in Electrical Engineering — *August 2021 - on going*

Research topic: *Implementation of Data-driven Algorithms in Intelligent E-nose System and Antenna Design.*

Khulna University of Engineering and Technology — *Khulna, Bangladesh*

Bachelor of Science in Electrical and Electronic Engineering, GPA: 3.57/4.0 — *March 2019*

Thesis: *Design and Construction of IoT Based Energy Meter with Complete Bypass Protection and Demand Side Load Management*

A complete model of hardware of energy meter has been designed in this purpose where the demand side load management has been implemented by IoT and the new approach of power factor measurement has been implemented. The website has been designed by using PHP and the server system was MySQL

Skills

Programming Languages	Python, JavaScript, PHP, C and C++, Matlab/Octave
Frameworks	AWS, Johnny-five, Flask
Programming Platform	Unix, Windows, Linux, Web
Designing and Simulation Platform	Ansys HFSS, Solidworks, AutoCAD, Autodesk Eagle, Autodesk Maya, Proteus.
Embedded System	Arduino, Raspberry Pi
Hardware Skills	Inkjet Printing, Photolythography, Sputtering, Microcontroller, Sensor and Antenna Fabrication

Professional Experience

AIMS Lab — *Research Engineer*

United International University, Bangladesh — *Nov 1, 2020 - Jan 31, 2021*

http://aimsl.uiu.ac.bd/

CMED Health Ltd. — *Junior Data Analyst*

A digital health provider institution of Bangladesh — *Feb 1, 2021 - Jul 31, 2021*

https://cmed.com.bd/

Research Interest

Machine Learning, Intelligent Sensor Design and Fabrication, Antenna technology, Robotics, Automation

Aptitude and Language Test

TOEFL: 93 Speaking-24, Reading-27, Listening- 21, Writing-21

GRE: 302 Quant-156, Verbal-146, AWA-3

Publications

Modern Data Analysis in Gas Sensors: A Mini-Review — *Journal of The Electrochemical Society*

Md Samiul Islam Sagar, Noah R Allison, Praveen K Sekhar — *Under review*

High Temperature Antennas: A Review — *Progress In Electromagnetics Research B*

Bachir Younes, Md Samiul Islam Sagar, Asif I Omi, Noah R Allison, Danielle Gedlick, Praveen K Sekhar — *2022*

Application of Machine Learning in Electromagnetics: Mini-Review

MDPI-electronics

Md Sagar, Samiul Islam, Hassna Ouassal, Asif I Omi, Anna Wisniewska, Harikrishnan M Jalajamony, Renny E Fernandez, Praveen K Sekhar

2021

Simulation study on an ICT-based maritime management and safety framework for movable bridges

MDPI-Applied Sciences

Md Mostafizur Rahman Komol, Md Samiul Islam Sagar, Naeem Mohammad, Jack Pinnow, Mohammed Elhenawy, Mahmoud Masoud, Sebastien Glaser, Shi Qiang Liu

2021

Region Based Convolutional Neural Network for Smart Driving Monitoring System

5th International Conference on Advances in Electrical Engineering (ICAEE), Dhaka, Bangladesh

Sourin Dey, Md. Samiul Islam Sagar, Md. Ashraful Alam

2019

Finest Projects

CPW-fed Super Wide Band Antenna Design and Fabrication

Hardware project

A Rogers RT/Duroid 5880 substrate CPW-fed super wideband antenna has been designed as a course requirement. The antenna working frequency range has been simulated using Ansys HFSS software from 4.68GHz to 110GHz which falls under C, X, Ku, K, Ka, Q, V, and W bands including mmWave.

Significance Analysis using ANOVA

Software project

The significance of the features in case of sensor drifting occasion has been investigated using ANOVA as a course requirement. The ANOVA provided important information about the significance changes of different features during the sensor drifting event.

Power Flow Optimization

Software project

A Gurobi based power flow optimization project for extended loading condition for future load expansion has been done as a course requirement. The project provided the optimal solution for a standard IEEE 6 bus system in case of future load expansion scenario.

Green Car

software project

A system designed for reduction of the emission of CO2 from automobiles with the help of biological elements (Algae). The green tube is referring to the Algae storage where the filtered exhaust gas will be sent and Oxygen will be created by the photosynthesis which will then be provided in the engine for increasing efficiency.

IoT Based Smart Wheel Chair

Hardware project

A model of a Wheel chair designed for disabled person having the features of IoT based monitoring system of medical parameters (heartbeat, blood pressure, temperature) with GSM based location tracking system and alarm system for emergency health situation.

New Blood Pressure Measuring Algorithm

Software project

A new algorithm has been introduced there for measuring blood pressure for both regular and irregular heart beat patient.

YOLOv3 based Classifier

Software project

An YOLOv3 Network development for restaurant management automation.

Efficient Fire Extinguisher and Emergency Exit

Idea

This idea is about stopping fire at the starting point. The fire extinguishers will be used directly in the circuit board where the fire actually broke down. The next part is about an alternative emergency spiral exit system around the building infrastructure.

Bluetooth Controller Car

Hardware project

A bluetooth based Android controlled robot.

3D Printer

Hardware Project

A low cost 3D printer model.

Voice Tracking Speech Data Acquisition

Software project

A program where speech data is been acquired by tracking the voice availability in the input side.

Color Based Object Recognizer Robotic Arm

Hardware Project

It is model of industrial robotic arm which can sense color and make decision of where to put an object of specific color.

Top Achievements

Intra KUET Olympiad of Mathematics — *2nd Runners-up*

Department of Mathematics, KUET — *2015*

ROBOLUTION, MIST Robotics Club, Bangladesh — *Participation*

Project: Line Following Robot — *2016*

Microsoft-Young Bangla Internship Program — *Participation*

Project: Green Car — *2017*

Workshop on Raspberry Pi: Project Design and Implementation — *Participation*

Project: Retro Pi — *2017*

Horizon: MATLAB Mania — *Member of the Judge Panel*

Competition on MATLAB programming — *2020*

Extra-curricular Activities

General Secretory of KUET Math Club	Arranging Math Olympiads and managing club activities throughout the year
Class Representative	Managing classes and exams and assisting teachers in conducting lectures
Mentor of EEE Makers' Hub of KUET	Arranging different technical skill based workshops and mentoring them
Office Secretary on IRAS, KUET	Arranging different research and innovation based workshops and mentoring them
Blood Donation Campaign	Regular blood donor

References

Dr.Praveen Sekhar — *praveen.sekhar@wsu.edu*

Associate Professor, Electrical Engineering, Washington State University, Vancouver, WA-98686

Dr. Md. Rafiqul Islam — *islambit@yahoo.com*

Professor, Department of Electrical and Electronic Engineering, Khulna University of Engineering and Technology

Dr. Ashraful Ghani Bhuiyan — *ashraf@eee.kuet.ac.bd*

Professor, Department of Electrical and Electronic Engineering, Khulna University of Engineering and Technology