TAWFIK MOHAMMED OSMAN

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SUMMARY

BSE Electrical Engineer passionate about exploring the area of Circuit Design and Communication Systems. A problem solver, seeking for hand-on experience and opportunities to apply the concepts of engineering learned.

EDUCATION

B.S.E, Electrical and Electronic Engineering;   Graduated May 2020
Ashesi University, Accra, Ghana.   3.73 GPA
M.S.E, Electrical Engineering;   Graduating May 2021
Arizona State University, Tempe, AZ.
Mastercard Foundation Scholarship, Honored Scholar.
Relevant Coursework: Communication Systems, Digital Signal Processing, Digital Communication, Digital Circuit Design.

TECHNICAL SKILLS

Data Analysis and Statistics: Python, R-Studio,
Design and Modeling Tools: Cadence, MATLAB, SOLIDWORKS, Microsoft Office
Programming: Python, MATLAB, C, C++
Others: Microsoft Visio, GNU Radio

PROFESSIONAL EXPERIENCE

Ghana Broadcasting Corporation, Ghana: Engineering Intern   May 2018 – Aug 2018
- Worked with the technical and production teams to monitor and process radio signals.
- Supervised the performance of transmission and reception Equipment and assisted in the maintenance of faulty equipment.

ACADEMIC PROJECTS

Ashesi University, Leadership IV for Engineers Design Project   Fall 2018 – Spring 2019
Collaborated with a team of six to design and develop a functioning prototype of a solar powered automatic gate for Ashesi community:
- Modelled and assembly the individual parts of the system using SOLIDWORKS
- Developed team schedule, including quality measurement for each major milestone (Microsoft Project)
- Learned to interface hardware component with wireless communication and MySQL database (Python & C++).

Fulton School of Engineering (FURI), Leveraging on Deep Learning to Predict the Optimal Beam Index, Using Wireless Sensing Localization   Summer, 2020
Led team of three to design and develop a breadboarded Prototype to measure the ECG using the pulse in the finger:
- Built a mmWave testbed, made of USRP transmitter and receiver together with mmWave antenna horns.
- Incorporated a wireless Sensing Localization system using Python and Dashboard software from Marvelmind Robotics.
- Collected a dataset of positions and beam directions of the mmWave from this setup and used to develop a Multi-layer neural network.

OTHER WORK EXPERIENCE

Arizona State University, Tempe, AZ: Tutored as UGTA (5 hours/week)   Spring 2020
- Assisted a faculty member in teaching Python Coursework (EEE498) for engineering students in Spring 2020.
- Enrolls in FSE201, took part in trainings and lectures that guides me as UGTA.

Arizona State University, AZ: Lab Grader (20 hours/week)   May 2020 – July 2020
- Grade lab assignment in Digital Design Fundamentals coursework (Uses DE-Lite 10, an FPGA board from Intel)

Arizona State University, AZ: Instructional Aid (5 hours/week)   August 2020 – Present
- Assist lecturer in organizing classes and controlling the teaching and learning equipment.
- I voluntary assist student in their projects and HomeWorks in the course I worked for.

ACTIVITIES

Integrating a Large Intelligent Surface with a testbed of mmWave transmitter and receiver System.   Present
The aid of this project is to develop an intelligent surface which capable of reflecting mmWave signals to dead zones, in terms of Non-line of sight transmission.
- Employing the knowledge from previous projects to interface a designed large intelligent surface, with the aid of socket connection in python.
- Calibrated the transmitter and receiver USRPs to ensure that a single tone transmission of the mmWave at the maximum power was achieved.
- We performed two field measurement and now we are now analyzing the data collected to make meaning out of it

Big Data Short Course by Prof. Widom of Stanford University, Ashesi University   July 2018
- Learned basic big data analyses using Python, MYSQL and Excel.
- Introduced to algorithms of Data Mining and Machine Learning.