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WALEED AZAM

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| **GitHub** | ⊡ | **Linked** in |

ABOUT

Experienced professional and team-player, with a demonstrated history of working in research and development (R&D) industry for the production of advanced software solutions to signal processing, data science, underwater acoustic, ROV and mobile communications related problems. Did agile software development of iOS apps. Interested in applied R&D for underwater stuff, and skilled in MATLAB, Python, LabVIEW, C++ machine and deep learning approaches.

EDUCATION

M.Sc. (Electronic System design and Innovation), NTNU, Trondheim, Norway   (Oct, 2020)

- Grade : **B**
- Specialization : *Signal Processing and Communication*
- Thesis : *Roboust Estimation of the distance of the ROV to improve the Guidance, Navigation and Control to inspect the Aqua Culture in the Net Pens*
- Advisors: *Prof. Pierluigi SALVO ROSSI, NTNU and Dr. Walter Charjia,* **SINTEF Ocean**.
- Pre-Thesis : *Channel Estimation for the moving mobile station at the downlink for the Massive MIMO system for ReRaNP lab Development at NTNU, Trondheim*
- Advisors: *Prof. Nils Torbjrön Ekman, NTNU and Jens Abrahim(PhD Student).*
- Projects:

    1- Low Noise Amplifier Design for Radio Communication at 2.4 GHz.

    2- Classification of Male and Female voices using Deep Learning.

    3- Design of Radio System for Indoor Communication using SDR.

    4- Recover voice from noise using Maximum Likelihood Estimator.

    5- Simple Communication System Using QPSK, Which can Transmit and Receive a Text message Using SDR, USRP, and LabVIEW

    6- Design of various Power dividers and filters using ADS for the course.

    7- Generation of sound tunes using python for Acoustic course.

    8- A back-end code for accessing the database in SQL for entry customer Items.

    9- Unsupervised learning for the Acoustic data to detect the meal bowl either for hunger or not.

    10- Performance analysis of machine learning classifiers on improved concept vector space models.

BS (Electrical Engineering), Governement College University Faisalabad, Pakistan   (June, 2016)

- Grade : **A**
- Final Year Project : *Biomedical based antenna design for telemetery and monitoring purposes at ISM band.*

TECHNICAL STRENGTHS

Languages: C++, Python, JAVA(Basic Level), LINUX(Basic Level), C, Latex, HTML.

Software: LabVIEW, ADS, CST, Visual Basic, MATLAB, Jupyter Notebook.

Areas: Signal Processing, Radio Communication, Underwater Communication, Remotely Operating vehicles (ROV), Doppler Velocity Log(DVL), Statistical Machine Learning, CNN, Electronics, IoT, RFID, Microcontrollor, DNN, Big Data and Computer Vision.

R and D, Teaching and Industrial Experience

NTNU, Trondheim, Norway | Graduate Research Assistant at Engineering Cybernetics Department. (09/2020 -)

Tasks: Interface between a controller/ MPC in Cybernetica's software CENIT and an insulin pump with glucose sensors from Inreda Diabetic BV, Netherlands. Includes programming in C++ and OPC server interface with the MATLAB. Possibly extended if the first tasks are completed early.

Supervisor(s): Andres Lyngvi Fougner and Patrick Christian Bösch and Øyvind Stavdahl.

NTNU, Trondheim, Norway | Teaching Assistant   (08/2020 - Present)
TELE 3004, Wireless communication, Lab Engineer. TTT4201 Radio system design for helping and evaluating the projects. Sensor for the course named TPD4195, Design Thinking. Leading the workshop session with Prof. Andre liem from product design department, NTNU.

SINTEF Oceans, Trondheim, Norway | Summer Job   (07/2020 - Present)
Working for the Project named Artifex, for improving the control system of the underwater robots using AI-based algorithms.

Role 1: Integrating the IMC communication protocol into the FhSim AquacultureRobotics project (C++) as well as the Aqueous GUI project (JavaScript) - Familiarize with the IMC protocol and its implementation in the FhSim AquacultureRobotics project (C++) as well as the Aqueous GUI (JavaScript). - Integrate the IMC protocol incrementally with consistent testing (verification). Include the aquaculture specific IMC messages defined by SINTEF. - Validate integration on the existing Aqueous – FhSim – ROV architecture. The code shall be properly commented, and the existing documentation shall be updated with the aquaculture specific IMC messages defined by SINTEF

Role 2:Implement an IMC TCP/IP interface for one or several sensors - Select a relevant sensor with reference to the aquaculture activities within SINTEF Ocean and familiarize with the device / system, especially with its interfacing side - Implement an IMC interface for the sensor on a regular PC using the necessary FhSim (C++) code incrementally and with consistent testing (verification). If necessary, define new specific IMC messages. - Implement a simplified GUI for sensor data visualization on a regular PC using the as the Aqueous GUI (JavaScript). Test and verify the code throughout the development iterations. - Validate the IMC interface and the data visualization The code shall be properly commented, and the existing documentation shall be updated with the aquaculture specific IMC messages defined by SINTEF

NTNU, Trondheim, Norway | Research Assistant   (01/2020 - Present)
Developed and published novel, *Smart city project for BS level course*, which involve both explanatory and predictive modeling.

NTNU, Trondehim, Norway | Graduate Teaching Assistant   (01/2020 - Present)
Responsible for assisting exercise hours and updating all the announcements on the Blackboard. TTT4135-Multimedia Signal Processing assisting with Prof. Andrew Perkis and Prof. Pierluigi Salvo Rossi.

NTNU, Trondheim, Norway | Teaching Assistant and Scientific Assistant   (07/2019 - 01/2020)

NTNU, Trondheim, Norway | Lab Development for Bachelor Course TELE3004.   (06/2019 - 08/2019)

NTNU, Trondheim, Norway | Summer Research Student. (06/2020 - 08/2020)

NTNU, Trondheim, Norway | Graduate Research Assistant at Engineering Cybernetics Department. (06/2020 - 08/2020)

Tasks: Interface between a controller/ MPC in Cybernetica's software CENIT and an insulin pump with glucose sensors from Inreda Diabetic BV, Netherlands. Includes programming in C++ and a wireless protocol of unknown type. Possibly extended if the first tasks are completed early.

Supervisor(s): Andres Lyngvi Fougner and Patrick Christian Bösch.

LCC- A Tech Mahindra Company, Lahore, Pakistan | RF level 3 Engineer. (09/2017 - 08/2018)
- Resolving Non-club Corporate and performing specific area complaints.
- Performing Indoor testing and resolving issue by providing dedicated solution to customers where needed. item Benchmarking on Nemo kit provided by Mobilink. item Drive testing using Nemo Invex II, Nemo Outdoor TEMS Investigation

Lab Engineer, Government College University, Faisalabad Pakistan | RF level 3 Engineer. (09/2016 - 08/2017)
- Teaching and R & D related tasks in the electronics lab.
- Managing departmental management related activities.