Zohaib Salahuddin

Aspiring Medical Imaging Engineer

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github.com/zohaibsalahuddin/ProjectsMAIA.git

Objective

An Erasmus + Scholarship granted student currently enrolled in 3rd semester of Masters in Medical Imaging aiming to be a Data Scientist in the field of Medical Imaging to make substantial contribution in the improvement of Medical Diagnostic Techniques.

Education

University of Girona - Semester 3

2019 - 2020

Erasmus Mundus + Master, Medical Imaging and Applications

Currently Studying the Following Courses:

Medical Image Registration and Applications, Medical Image Segmentation and Applications , Computer Aided Surgery and Medical Robotics, Computer Aided Diagnosis and e-Health.

Universita degli Studi di Cassino - Semester 2

2019 - 2019

Erasmus Mundus + Master, Medical Imaging and Applications

29.5/30, Top of the Class

The Projects Include:

- Multimodal Brain Tumor Segmentation (BRATS 2018) - *Pattern Recognition.*
- A Parallel Implementation of Computed Tomography Reconstruction - *Parallel Processing Systems.*
- Fundus For Free - A Complete Web Based Deep Learning Solution for Fundus Imaging for Doctors and Patients - *Distributed Programming and Networking.*
- Leveraging SLIC Superpixel Segmenation and Cascaded Ensemble SVM for fully automated Mass Detection in Mammograms - *Advanced Image Analysis.*

Universite de Bourgogne - Semester 1

2018 - 2019

Erasmus Mundus + Master, Medical Imaging and Applications

18.18/20, Top of the Class

The Projects Include:

- Deep Learning Based Left Ventricular Segmentation using Cardiac MRI Images. - *Medical Sensors.*
- Face Recognition using PCA. - *Applied Maths.*
- Harris Corner Detection on 3D Meshes. - *Software Engineering.*
- Automatic Fault Detection in Soft Drink Bottling Plant - *Image Processing.*

Electrical and Electronics Engineering

2013 - 2017

University of Engineering and Technology Lahore

CGPA: 3.79/4, TOP 5 percent of the class.

- **2nd Postion IEEE International Humanitarian Contest** for the Final Year Project "Classification of Upper Limb Gestures Using Surface Electromyography for Amputees, Paralyzed and Multi-purpose Applications" .
- **"GO GREEN IN THE CITY" By Schneider Electric (Middle East, South Asia and Africa Region Winner).** Invited to Paris for the global finals.
- Treasurer IEEE UET Lahore (2016 - 2017).
- Chair Social Media and Design IEEE UET Lahore (2015-2016).
- Included in Dean's Honor Roll for 7 semesters.

Work experience

Mentor - A Siemens Business
Oct 2017 - Sep 2018

Software Development Engineer

- Currently working in **Cloud Services Platform** team to develop an **Internet of Things** (IOT) based *miniaturized embedded solution* which will facilitate sensing , actuation, data processing and support advance communication protocols. My contributions include:
  - Played an efficient role in drawing out the specification requirements for the *mote SDK*.
  - Developed **Hardware Abstraction Layer** (HAL) for the Mote SDK.
  - Worked on **MQTT, COAP** and made applications for *Artik 30 and Artik 710* boards to demonstrate the power of our embedded solution for **THREAD** protocol.

Instrument and Control Systems Engineer
Aug 2017 - Oct 2017

Engro PowerGen Qadirpur Limited

- Developed and launched an application from scratch for **Plant Safety Training and Evaluation**.
- Implemented a new interface on **DCS (Distributed Control Systems)**.
- Worked on the Commissioning of **Global Performance Advisor** interfacing with DCS and plant instrumentation.
- Worked on out of order Asset Management System for **Predictive Maintenance**.

Teaching Assistant
Sep 2016 - Jan 2017

Digital System Design Theory + Lab , UET Lahore

- Entrusted with the responsibility of conducting the lab sessions.
- Evaluating performance of students in the labs.
- Making Quizzes and Checking them.
- Contributed towards the formulation of lab assignments.

Embedded Linux Intern
Jun 2016 - Aug 2016

Mentor Graphics Pakistan

Efficiently completed the eight given tasks during the course of three months. The internship was focused on Embedded Linux with specific focus on ***Yocto Project*** . Completed the Linux From Scratch book and developed a ***custom Linux distribution***. Worked on ***Multi threading and kernel drivers*** for beagle bone black board.

Achievements and Distinctions

- **"GO GREEN IN THE CITY" By Schneider Electric (Winner MEA Region)**
  - **Project Title:** "Digital Web Based Solution to Reduce Energy Wastage Due to Faults or Poor Maintenance."
  - **Middle East, South Asia and Africa Region Winner:**
    - Won the MEA region finals and got invited on a Sponsored Trip to Paris for the finals of the Go Green in the City competition between only 12 teams from all over the world. The final was to be held from 8th to 12th October, 2017.
    - This Project focused on developing and utilizing smart devices to detect power wastage by developing an intelligent and adaptable intelligent system that utilizes power consumption data of devices.
    - **LINK :** http://saudigazette.com.sa/article/516195/BUSINESS/Go-Green
- **2nd Postion IEEE International Humanitarian Contest**
  - Our Final Year Project titled *"Classification of Upper Limb Gestures Using Surface Electromyography for Amputees, Paralyzed and Multi-purpose Applications"* won second position.
  - We Received *IEEE AMGTP Travel Grant* to attend and present the project at IEEE IAS Annual Meeting at **Cincinnati, Ohio.**

- UET General Knowledge Competition Winner (2016).
- UET General Knowledge Competition Winner (2014).
- Skill Knowledge and Ability Test (SKAT) Winner (2013).
- Merit Scholarship Holder BISE for being in TOP 20 position holders. (2013)
- Among the Top 16 Finalists National Chemistry Talent Contest Held at Karachi. (2012)
- Merit Scholarship Holder FBISE for being in the TOP 10 position holders. (2011)

Undergraduate Projects

- **Undergraduate Final Year Project:** "Classification of Upper Limb Gestures Using Surface Electromyography for
  Amputees, Paralyzed and Multi-purpose Applications."
  - The success of this project lied in providing a robust gesture classification using myoelectric signals acquired using surface electrodes which was then used to drive a complete low cost human arm.
  - This project also explored the control of the limb for paralyzed using external myoelectric signals.
  - This project was successfully deployed and tested for an amputee.

Link for the Project Video: https://youtu.be/sEWZ1KXDYpI

- **Undergraduate Semester Projects:**
  - A BJT-based audio amplifier with low SNR. (Analogue Electronics)
  - A blue-tooth controlled obstacle avoidance robot capable of mapping in Realtime. (Microprocessor Systems)
  - MIPS Processor Using Verilog (Digital System Design)
  - A blue-tooth controlled Inverted Pendulum capable of moving and at the same time maintaining it's balance on two-wheels with the weight of up-to 10kgs. (Control Systems)
  - Speech Training using MATLAB after signal analysis to detect Yes or No. (Digital Signal Processing)
  - Hotel Management System. (Database Systems)
  - Text Recognition. (Machine Learning)

Technology Skills

- **Programming Languages:** C , C++ , Java , Python, Matlab , Ni LabView , Verilog, Tensorflow,Pytorch, CUDA, JavaScript, Bootstrap, CSS, HTML.
- **Softwares:** Matlab, NI LabView , Keil Microvision, Yocto Project, Proteus, Eclipse, Xilinix , winspice, Multi-sim, ITK-Snap.
- **Operating Systems:** Microsoft Windows, Ubuntu, Solaris , Fedora.
- **Scripting Languages:** Python, Shell Scripting.
- **Embedded Technologies:** Beaglebone black, Stm32F4, Tiva C series, MyRIO FPGA, Raspberry Pi, Artik 710, Artik 030.
- **Design and Video Editing:** Adobe Premiere Pro, Adobe After Effects, Adobe Illustrator.
- **Microsoft Office**