europass Curriculum vitae

PERSONAL INFORMATION

Saad Ahmad

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WORK EXPERIENCE

Jul 2018–Aug 2018

Engineering Services Intern

Pak-Arab Oil Coorporation (PARCO), Mehmood Kot (Pakistan)

I worked on various projects being carried out by the Engineering Services Department at PARCO. The main purpose of this department is to plan, design and execute new projects in the industry.

I got hands on experience of the design, planning and execution of projects related to Electrical Power and Instrumentation.

I also contributed in designing the lighting system of a certain area of the industry and supervision of deployment of hydraulic road blockers.

I was a able to get a practical knowledge of

Switch Gears | Transformer | Grid Station | Transmission Lines | Controllers | Distributed Control System.

Sep 2017–Mar 2018

Research Assistant

ConneKt Lab, NUST-SEECS, Islamabad (Pakistan)

I worked on a MicroCell Injection System. My major tasks included,

- Developing a very low latency video and control data channel (~50ms) on commercial 4G network via WebRTC (Web Real Time Communication) and MQTT (MQ Telemetry Transport), in order to enable doctors experiment at a very low cost from anywhere in the country.
- Developing a simple and stable control interface to the user to operate the machine.
- Introduction of automation (via OpenCV, Optimisation and Neural Net.) in machine so that tedious and time staking tasks can be performed automatically without the prior training and intervention of the human operator.

WebRTC | OpenCV | Optimisation | Hardware to Browser Interfacing | MQTT

Jun 2017–Aug 2017

Sales & Utilities Intern

ABB Power & Automation Ltd., Lahore (Pakistan)

During my time in ABB,

- I worked on the grid design layout and SLD(Single Line Diagram).
- Hands on experience with SVC (Static Var Compensator), STATCOM (Static Synchronous Compensator), Surge Arresters etc.
- Developing a heat map of Utilities and selling sectors for ABB in Pakistan.
- Case Study of and Smart Grid System in Sweden.

Grid System Layout | SLD | SVC | STATCOM | Breaker Systems | Utilities & Selling Sectors | Smart Grid

Jun 2016–Aug 2016

Electrical Engineer Intern

Sugar Mills, Thal Industries, Layyah (Pakistan)

During my time in the Sugar Mills,

- I took part in the annual maintenance of Generator, Control Valves, Steam Turbines.
- Got a hands on experience of PLC and DCS logic design and Variable Frequency Drives (VFD).

PLC | DCS | VFD | STEAM TURBINES & GENERATORS | Ladder Logic | PID Controllers

EDUCATION AND TRAINING

Sep 2015–May 2019

Bachelor in Electrical Engineering

National University of Science and Technology, Islamabad (Pakistan)

CGPA: 3.52/4.00

Aug 2013–Jul 2015

F.Sc.

Punjab College of Science, Lahore (Pakistan)

Mark Obtained: 91%

Apr 2010–Jul 2013

Matric

Cadet College Kallar Kahar, Kallar Kahar (Pakistan)

Mark Obtained: 96%

PERSONAL SKILLS

Mother tongue(s): Urdu

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

Excellent communication and presentation skills acquired through project presentations in NUST and case study presentation in ABB Power and Automation Ltd, Pak-Arab Oil Corporation (PARCO) and as a Research Assistant in Connekt Lab

Organisational / managerial skills

- Director Web & IT, NUST Fine Arts Club (Managing a team of software developers in order to provide the one of the best web experiences delivered by the Student Organisations in NUST)
- Leading team of software developers to develop a web based services of Noerric an emerging AI Startup in Pakistan.

Job-related skills

I have a hands on knowledge of modeling softwares like,

Multisim | Proteus | Adobe Eagle | ADS | PowerWorld

I have very good and practical knowledge of programming languages.

C | C++ | C# | Python | Javascript | ES6 | HTML5 | CSS3 | MATLAB | PHP | ARM and Intel Assembly Language

I make use of a lot of APIs and Libraries in projects.

OpenCV | OpenGL | GLUT.h | Tensorflow | PyTroch | Keras | Greensock.js | Pubnub (WebRTC) | jQuery | OpenBCI

I also have a good knowledge of frameworks.

Vue.js | React JS | React Native | Laravel (PHP) | Xamarin

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Proficient user	Independent user	Independent user	Proficient user

Digital skills - Self-assessment grid

ADDITIONAL INFORMATION

Projects

1. SSVEP Based User Interface (Brain Computer Interface)

The brain computer interface is the method of interacting with the computer just with our thought. My Bachelor Final Year Project is to develop a User interface which can be operated directly with human brain. The neurological process used to achieve this is Steady State Visually Evoked Process (SSVEP). My advisor in this project is Dr. Awais Mehmood Kamboh

OpenBCI | Stocahsitic Signal Processing | Python | SSVEP | ERP

2. Low Latency teleoperation of MicroCell Injection System

In order to provide a smooth remote operation of the MCI System, I contributed in the development of a system which delivers a video feed and control feed at a very low latency (~150ms) on Commercial 4G networks for the smooth operation of telemetry cell surgery. I undertook this project under the supervision of Dr. Saad bin Qaisar and Dr. Osman Hassan.

WebRTC | MQTT

3. roVBot

Security and surveillance at low cost is getting rare with every passing day. roVBot is a domestic drone which can be controlled from anywhere in the world via WiFi/Internet Connection and user can get sonar and visual data remotely. The robot can move around freely and the user can observe all the blind spots in the region (home/office) from anywhere in world at a very low latency. I completed this projected as a semester project in the course of Microprocessor systems taught by Dr. Saad bin Qaisar

WebRTC | JS | HTML | CSS | PHP | Python | RaspberryPI | Atmega328

4. Dance Extraction using Pose detection

I used the pose detector Convolutional Neural Network proposed by the paper Realtime Multi-Person 2D Pose Estimation using Part Affinity Fields and used it to extract the dance moves in a video.

5. Face Recognition base on FaceNet

I implemented the FaceNet algorithm for face recognition using python

Python | dlib | OpenFace | Keras

6. Webcam based Eye Tracker based on Vector Product

I implemented an eye tracker in python using OpenCV and cython. I implemented a technique of finding the global minima in the image (i.e eye pupil) using vector products as mentioned in the research paper "ACCURATE EYE CENTRE LOCALISATION BY MEANS OF GRADIENTS" .

Python | OpenCV | Cython | lib

7. GLASS.h:

In C, OpenGL, GLUT.h, SDL all have a learning curve and many lose hope and abandon learning and experience of these powerful libraries. We developed glass so that new students can learn about such things the easy way. GLASS.h is a C library that provides a low level abstraction of GLUT.h thus reduces the learning curve.

Checkout GLASS.h Github Repository.

C | C++ | OpenGL | GLUT.h

8. Mathematical Analysis and Computer Synthesis of Music

I made a program after a through mathematical analysis of music waveform composition and sinusoidal patterns in which occur in musical melodies and made a program based of the equations which was able to create musical sounds. I have done this project under the supervision of Dr. Sajid Ali

C# | Complex Mathematical Analysis

9. MathParser:

A very simple to use and extendable math expression parsing library (PCL) in C#. Ideal for Scientific Calculator App Development in C#. It is capable of processing matrices and real numbers. Store variables and implement various function. The functionality of the library functionality can be extended very easily. I completed this project as a semester project in the course taught by Dr. Kashif Sharif

Checkout MathParser Github Repository

C# | UML | PCL (Portable Class Library)

10. MatApp:
An android Scientific Calculator App based on MathParser.

Xamarin | Android | Cross platform

11. Tetris:
Developed a Tetris game on 8x8 matrix display by using only the basis digital logic circuit components (Gates, Flip Flops and Counters)

Digital logic design | Proteus | Hardware