

92-222-2772250-73 (Ext : 6214) | [attiya.baqai@faculty.muett.edu.pk](mailto:attiya.baqai@faculty.muett.edu.pk)

web : <http://attiyabaqai.weebly.com/>

Linkedin : <https://www.linkedin.com/in/attiya-baqai-a42488149/>

# Prof. Dr. Attiya Baqai

**PhD, Electronics Engineer (ELECTRO/7164)**

**Bungalow No 67/ B, Block B, Unit no 2, Latifabad,**

**Hyderabad, Sindh, Pakistan.-71000**

## EMPLOYMENT

1<sup>st</sup> Jan 2022- Present

**PROFESSOR**– Electronic Engineering Department, Mehran UET, Pakistan

- + Teaching, Research & Supervision.
- + Member patent review board at MUET
- + Member DMRC at ORIC MUET
- + Member DMRC at Electronic Engineering Department MUET
- + Member QEC SAR Evaluation Team for ME/ PhD Program
- + Committee Member for HEC Research Project Evaluation & Monitoring at MUET
- + Member Final Year Project Committee Dept of Electronic Engineering
- + Member OBE Committee at Department of Electronic Engineering, MUET
- + Member Board of Studies at Department of Electronic Engineering MUET
- + Member Board of Faculty at FEECE MUET Jamshoro.
- + Member Advisory Board at National Expansion Plan of National Incubation Centers Pakistan (NEP\_NIC Jamshoro)

11 July 2019-31<sup>st</sup> December 2021

**ASSOCIATE PROFESSOR**– Electronic Engineering Department, Mehran UET

- + Teaching, Research & Supervision.
- + Member patent review board at MUET
- + Member DMRC at ORIC MUET
- + Assistant focal person from MUET for NGIRI- Ignite
- + Committee Member for HEC Research Project Evaluation & Monitoring at MUET
- + Convener Final Year Project Committee Dept of Electronic Engineering.

10 Oct 2009 – 10 July 2019

**ASSISTANT PROFESSOR**– Electronic Engineering Department, Mehran UET

- + Teaching, Research & Supervision.
- + Class Advisor

14 Sept 2004 – 09 Oct 2009

**LECTURER**– Electronics Department, Mehran UET, Pakistan

- + Teaching, research & Supervision
- + Course up gradation
- + Lab Incharge & Class Advisor

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12 Jul 2004 – 13 Sep 2004

**LAB LECTURER** – Electronics Department, Mehran UET, Pakistan

- + Teaching, research & Supervision.

2003 – 2004

**VISITING FACULTY**– Institute of Scientific Management (ISM) Unit #2, Latifabad

- + Teaching BS students
- + Library Incharge.

2003 – two months

**VISITING FACULTY** – Hyderabad Institute of Arts, Science & Technology (HIASST)

- + Teaching BS students

2002 – 2003

**INTERNSHIPS** – Internship programs attended during B.E.

- + Six week (June/July 2002) Internship on "MV-700/EV Radar Trainer" at Telematics Lab Department of Electronics & Telecommunication Mehran UET, Jamshoro, Pakistan.
- + Two months internship at Civil Aviation Training Institute (CATI) Hyderabad in area of aviation Equipment.

## EDUCATION

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2016

**PhD**– Electronic Engineering (Embedded System), Mehran UET, Pakistan

- + Recipient of Endowment fund scholarship under Faculty Development Program for PhD

2009

**MASTER OF ENGINEERING**– Telecommunication & Control, Mehran UET.

- + 87.13% (Highest marks in PGD)

2003

**BACHELOR OF ENGINEERING**– Electronic Engineering, Mehran UET, Pakistan.

- + Secured 88.14% (Second position).
- + Recipient of merit scholarship during under graduation

1998

**INTERMEDIATE**– B.I.S.E, Hyderabad, College of Excellence.

- + Secured 78.09% (2nd position in Hyderabad Board)
- + Recipient of merit scholarship from B.I.S.E
- + Recipient of Gold Medal from College of Excellence Hyderabad.

1996

**MATRICULATION**– B.I.S.E, Hyderabad, Hayat Girls High School.

- + Secured 84.30%.(A1 Grade)

## AWARDS

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2010

**STAR LAUREATE** – Awarded in the field of Engineering in category of women in 2010 for year 2009 by South Asia publication in 2010 at Jinnah convention center Islamabad.

- 2012 **IDEAL ICT EXCELLENCE** – Awarded Ideal ICT Excellence Award 2012 as IT student at Hotel Sheraton Karachi.
- 2012 **ROLL OF HONOURS** – Awarded as Roll of Honours Award at 40 year celebration of Dept Of Electronics MUET JAMSHORO-10th November 2012
- 2018 **EXCELLENCE ACHEIVEMENT AWARD** – Awarded Excellence Award 2018 by Mehran University Alumni Association (MUAA) at MUET Auditorium Jamshoro-6th December 2018.
- 2022 **IEEEP EXCELLENCE AWARD** - IEEEE Excellence Award,18th March 2022 by IEEEE Local Centre Hyderabad Chapter and Local Council at Prof. Haji Mehmood Senate Hall, Mehran University of Engineering and Technology , Jamshoro
- 2023 **RECOGNISED AND FEATURED BY WIPO IN WORLD IP DAY GALLERLY 2023-** Featured by World Intellectual Property Office (WIPO) for the World IP day Gallery as a “Change Maker” in the field of Engineering to represent Pakistan, featuring women from around the globe comprising more than 60 countries from various fields.

2010-2023

**AWARDS & FUNDINGS FOR PROJECTS** – Supervised / carried out following award winning projects:

- + **Funding 50,000 PKR:** GPS based Railway System"1st prize: 5 Gold Medals and Rs 50,000 Cash prize in PTA Project competition, March 2010.
- + **Funding 12,000 PKR:** “Electronic Hand Glove for wireless control of Appliances”, 2nd Position, Gold Medal and a cash prize of 12,000 Rs in” 25th IEEEE All Pakistan Student Seminar held on 3rd March 2010, Bahria University Karachi.
- + **Funding 3,000 PKR** Real time EEG Based Gesture Recognition System for Paralyzed Patients” 5thTH POSITION, Silver medals with 3000/Rs cash prize in 26th IEEEE Student Seminar held on 3rd March 2011 at Pakistan Navy Engineering college (PNEC), NUST.
- + **Funding 30,000 PKR:** BEST ENGINEERING DESIGN AWARD with shield, certificate & a cash prize of Rs 30,000 on robot named as “MUET Boy”in 7th National Engineering Robotics Competition (NERC 2011) Rawalpindi 28th June to 2nd July 2011 at College of E&ME.
- + **Funding 3, 000, 000 PKR:** Approved in the Endowment scheme of Mehran UET to pursue PhD.
- + 1st prize in national level competition innovative idea category, TechCombat-Technology Battle 2012” 7th April, 2012 MUET Jamshoro for “Brain Robot Interaction: An Aid for Paralyzed”
- + 2nd prize in national level competition innovative idea category, TechCombat-Technology Battle 2012” 7th April, 2012 MUET Jamshoro for “Intelligent Domestic Electricity Theft detection System”.
- + **Funding US\$1212:** Secured funding of US\$ 1212 for the project titled “MITHI TELEMEDICINE NETWORK – Social ICT” under IEEE R10 Humanitarian Technology Activities – IEEE SIGHT for 2013.

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- + Best Paper Award in SCONEST 2016, IEEE 5th Student Conference on Engineering Sciences and Technology (Post Graduate Section) , At Hamdard University Main Campus, Karachi for paper "Experimental demonstration of RGB LED-based Underwater Optical Communication",
- + **Funding 200,000 PKR:** 3rd prize in Student's Startup Business Competition SSBC 2017, with project "Optimal Tactile Display"- secured seed money of 200000/ Rs (2 Lac) from HEC & PEP.
- + **Funding 100,000 PKR:** Secured 1 Lac/Rs funding for FYP project "Blood Sample Analysis using image processing" under Research Incubation in Public Universities (RINU) - Jan 2018.
- + **Funding 100,000 PKR:** Secured 1 Lac/Rs funding for FYP project "Assessment Tool Development for Visually Impaired" under Research Incubation in Public Universities (RINU) - Jan 2018.
- + **Funding 600,000 PKR:** Secured 6 Lac /Rs funding for startup company "OvueTech" under Research Incubation in Public Universities (RINU) - Feb 2018.
- + **Funding 200,000 PKR:** 2<sup>nd</sup> prize in Student's Startup Business Competition SSBC 2019, with project "Elementary Education for Visually Impaired"- secured seed money of 200000/ Rs (2 Lac) from HEC & PEP
- + **Funding 70,128 PKR:** Funded project of Rs.70,128/ Rs by NGIRI- IGNITE 2019 for FY Project " Design of Digital Range of Motion (ROM) Measurement System". Sept 2019
- + **Funding 80,000 PKR:** Funded project of Rs.80,000/ Rs by NGIRI- IGNITE 2019 for FY Project " Harnessing Power of Quanta: Analysis, development and implementation of quantum algorithms and devices". Sept 2019. (Also selected for Ignite National Championship 2020)
- + **Funding 200,000 PKR:** Secured funding of Rs 2 Lac in Shark Session, DUHS-DICE Health Innovation Exhibition 2019 by Novartis (Pharmaceutical Company)- Expo Center Karachi- Oct 2019.
- + **Funding US \$6,000/-:** Secured funding from HEC Patent support Program under faculty development as patent filing fee for Patent. Publication No: US-2019-0347961, Published by US Patent Office (USPTO) on 14 November 2019. Title: Optimal Tactile Display". Inventors: Engr. Abdullah Memon, **Dr. Attiya Baqai**, Engr. Mudassir Kazmi
- + **Funding 60,000 PKR:** 2nd Prize with prize money of 60,000/ Rs in Project Competition in DICE-IET 2020 COMSATS Lahore Campus, for "ASH Braille", held on 6-7th March 2020
- + **Funding 600,000 PKR:** Secured funding of 6 Lacs from COMSATS Lahore & Silicon Valley Investors USA for startup ASH Braille in DICE-IET 2020 COMSATS Lahore Campus, held on 6-7th March 2020
- + She Loves Tech Pakistan for "AgriTech" team led by Dr. Attiya Baqai- 19th September 2020 winner from Sukkur city round, shortlisted for final round
- + Agri-Surge Innovation Challenge by Ignite team led by Dr. Attiya Baqai, 15th August 2020 shortlisted for next round
- + **Funding 72,783 PKR** by NGIRI- IGNITE 2021 for FY Project " Design and progression analysis of neuro rehabilitation system using Machine learning". June 2021

- + **Funding 75,000 PKR:** Won 2nd Prize with cash award of 75000/ Rs in Lab2Market event project exhibition as part of National Artificial Intelligence Forum (NAIF) held on 2nd September 2021 for the project "Design and progression analysis of neuro rehabilitation system using Machine Learning" at Sino Pak Center of Artificial Intelligence (SPCAI), Pak-Austria Fachhochschule Mang Haripur, KPK.
- + **Funding 30,000 PKR:** Secured funding of 30,000/Rs in Dice Shark and 10,000/Rs in special prize for "Design and implementation of Digital Spirometer for monitoring lungs health status" in 6th All Pakistan DUHS-DICE Health Innovation exhibition held on 30th December 2021 at Dow University Ojha Campus.

2017-2023

## STARTUPS

Have played role of **advisor/ mentor** in following notable startups.

### 1. **OVUE TECH**

- Worked as Member Board of Advisors for "**Ovue Tech**"
- + OVue Tech- A startup of Innovation & Entrepreneurship Center Mehran University of Engineering & Technology (IEC-MUET)  
CEO: Abdullah Memon, Dr. Attiya Baqai (Advisor-honorary)  
Worked as FYP supervisor, this project is now turned into Startup  
- Achievements of Ovue Tech
- + **Funding 200,000 PKR:** 3rd prize in Student's Startup Business Competition SSBC 2017, with project "Optimal Tactile Display"- secured seed money of 200000/ Rs (2 Lac) from HEC & PEP
- + **Funding 600,000 PKR:** Secured 600,000/Rs funding for startup company "OvueTech" under Research Incubation in Public Universities (RINU) – A Sindh Government project-Feb 2018
- + "Ovue Tech" is one of the 15 startups from all over Pakistan selected from 700 applicants, and incubated in "National Incubation Center" Islamabad. (Remote Incubation)- April 2018.
- + Ovue Tech Shortlisted in Preston Entrepreneurial Challenge PEC18 Grand Finale held in Preston University Islamabad on 11th and 12th of May, 2018.
- + Secured 3<sup>rd</sup> Prize in 1stFlight by TIE Islamabad at Innovation Hub Jamshoro in July 18/ August 18.
- + **Funding 200,000 PKR:** OVUE Tech won 1st place, best startup amongst 200 applicants with prize money of Rs 2 Lacs at the Erupt Superior Business Competition organized by Innovation District 92 Lahore. August 2018.
- + Only company selected from Pakistan to represent Pakistan in Shanghai Cooperative Organization (SCO) member state youth Innovation and investment platform. 22-24 Oct, 2018.

### 2. **DA Physio (Digital Assistant Physio)**

- + **Funding 200,000 PKR:** Secured funding of Rs 2 Lac in Shark Session, DUHS-DICE Health Innovation Exhibition 2019 by Novartis (Pharmaceutical Company)- Expo Center Karachi- Oct 2019, for Project "**Design of Digital**

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**Range of Motion (ROM) Measurement System**" in collaboration with Dow University of Health Sciences Karachi- Feb 2020

### **3. ASH BRAILLE**

- + **Funding 200,000 PKR:** 2nd prize in Student's Startup Business Competition SSBC 2019, with project "Elementary Education for Visually Impaired"- secured seed money of 200000/ Rs (2 Lac) from HEC & PEP-Feb 2019. Company registered as **ASH Braille** in MUET-IEC.
- + **Funding 600,000 PKR** Secured funding of 6 Lacs from COMSATS Lahore & Silicon Valley Investors USA for startup **ASH Braille** in DICE-IET 2020 COMSATS Lahore Campus, held on 6-7th March 2020

### **4. Mehran Stairlift**

- + **Funding 9800\$** Approved funding of 9800 US Dollars for startup Mehran Stairlifts from EPICS in IEEE January 2023 for making 10 units as community service and work with NGO/NPO.
- + National-level FYDPs financial awards 2022 winner 2022 by Pakistan Engineering Council
- + National Idea Bank 2022 Provincial level winner
- + Shortlisted for PM Youth Innovation award.
- + Incubated at NEP NIC Jamshoro in 4<sup>th</sup> Cohort Launchpad

## SERVICE ACTIVITY

### PROFESSIONAL DEVELOPMENT

#### SEMINAR/ WORKSHOPS-

- + One day workshop on "Workshop on Matlab" held on 19th December, 2006 at MUET, Jamshoro.
- + One day International Workshop on "Wireless Sensor Networks" held on 13th April 2008 under auspices of IMTIC'08.(MUET).
- + 3-Days Certificate Training course on "Field Programmable Gate Array (FPGA)", 13-15 March 2009, MUET Jamshoro.
- + One day Workshop on "Career Advancement A Multifold Approach", 28th March 2009. MUET Jamshoro.
- + Lecture on "Problem Based Learning" by Dr M. Akbar Hussain ALLBORG university Department of Electronic Systems Denmark. 26<sup>th</sup> March 2010 MUET Auditorium.
- + Two Full Day Certificate Training Course on EDA Tools especially on FPGA Advantage, 3<sup>rd</sup> & 4<sup>th</sup> April 2010. at cyber interactive lab Dept of Electronics MUET Jamshoro.
- + One day national Workshop on Intellectual property Rights in Pakistan Challenges and Opportunities April 26, 2012 (World IP Day) at MD Hall MUET Jamshoro.

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- + Two Days hands on training on "Silicon labs Microcontrollers using C Language".1<sup>st</sup>-2<sup>nd</sup> September 2012, 9:00 am to 4:00 pm. (Saturday & Sunday)
- + Attended IMTIC08, IMTIC12, IMTIC13, IMTIC15, IMTIC18 & IMTIC21.
- + One Day Seminar / Workshop / Awareness Program on Registration / Grant of Patents, Trademarks and Copyrights to the individuals.  
Intellectual Property Rights at Senate Hall, MUET, Jamshoro, Pakistan on 7th December 2015 by Patent Office, IPO-Pakistan.
- + Innovation & Entrepreneurship Session by The NEST i/o Team from PASHA at MUET Auditorium-on 7th March 2016 organized by IES and ICS MUET.
- + Video conference regarding Online NRPU and TDF on Tuesday, 24th October 2017, at 11:00 a.m. at video conference hall I.T building
- + Projection of TDF on 27th October, 2017 at 10:30 a.m. at ORIC Auditorium.
- + One day awareness session on Intellectual Property (IP) awareness program of Pakistan-1st Nov 2017 at ORIC Auditorium.
- + "Artificial Intelligence" (AI) seminar at World Telecommunication and Information Society Day, May 17, 2018. Audio Video Conference room IIT Building MUET.
- + Global Entrepreneurship Week 12-18 Nov 18, celebrated at MUET Jamsoro.
- + Attended seminar on Prospect scholarship opportunities for research and Collaboration in Europe" by Dr. Yar Muhammad Mughal- University of Tartu, Estonia (24-07-2019)
- + Attended IEEE Fair Oct 1-3<sup>rd</sup> 2019, Karachi Expo Centre.
- + Delivered Talk on "Activating innovation and commercialisation in MUET", in Academia Conference at IEEE Fair Oct 1-3<sup>rd</sup> 2019, Karachi Expo Centre.
- + Participated in 5<sup>th</sup> All Pakistan DUHS-DICE Health Innovation Exhibition, 16-17 Oct 2019.
- + Organised and attended an Interactive Session on "Importance of Patent in the National Economy" at AV Conference Hall, IIT Building, MUET, talk delivered by Dr. Mohsin Siraj, Philips Holland. 8<sup>th</sup> January 2020.
- + Delivered seminar as resource person on "Prospect funding opportunities for FYPs" at Audio Video Conference Hall, IIT Building MUET on 27th Jan 2020.
- + Attended DICE-Information & Enabling Technologies (IET) Innovation · COMSATS University Islamabad, Lahore Campus · March 6-7th 2020
- + Attended webinar on "Automatically Build tinyML Solutions on Embedded Devices" certificate presented by Tina Shyuan, Senior Product Marketing Manager, Qeexo & Mary Bennion, Arm AI Ecosystem Manager, Arm- 20<sup>th</sup> May 2020. (certified)
- + Attended webinar on "What are the Benefits of In-Vehicle Sensor Fusion for Autonomous Vehicles?" certificate presented by Modar Alaoui, Eyeris CEO & Mary Bennion, Arm AI Ecosystem Manager, 29<sup>th</sup> July 2020.
- + Attended Digital 24<sup>th</sup> European Conference on Artificial Intelligence, 29<sup>th</sup> August-8<sup>th</sup> September, organized by the University of Santiago de Compostela Santiago Spain.

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- + Attended and organized "Android Development – An Introduction"- 0.5 CPD webinar by Engr. Khuhed Memon on 15-08-2020. MUET
- + Attended and organized webinar on "Latex (Thesis Writing Tool)" by Prof. Dr. Wajiha Shah for Final Year students of ES on 05-09-2020
- + Organised Final Year Project exhibition for F16ES at Department of Electronics Engineering on 2<sup>nd</sup> November 2020.
- + Attended Two day international Training- Workshop on scientific paper and paper writing organized by Islamic World Educational, Scientific and Cultural Organization ICESCO Kingdom of Morocco Rabat 14-15 December 2020.
- + Attended and organized 0.5 CPD workshop on "Natural Language Processing- An introduction" by Engr. Khuhed Memon held on 26<sup>th</sup> December, 2020 at Mehran University of Engineering & Technology Jamshoro.
- + Conducted 0.5 CPD webinar as resource person on "Prospect Funding Opportunities for FYPs" held on 7<sup>th</sup> January 2021 through MS Teams organised by Department of Electronic Engineering in collaboration of ORIC & MUET.
- + Coordinated and organised online Declamation contest on 27<sup>th</sup> January, 2021 for department of Electronic Engineering MUET Jamshoro at AV conference room IIT building.
- + Attended 6<sup>th</sup> IAB (Industrial Advisor Board) Meeting of Electronic Engineering department and Interactive Session between Industrial Experts and final year students on 18<sup>th</sup> Feb. 2021.
- + Attended and organized ""Academic Writing and Plagiarism Policy Awareness" on 25<sup>th</sup> February 2021,"- 0.5 CPD webinar by Dr. Farida Memon through MS Teams organised by Department of Electronic Engineering in collaboration of ORIC & MUET.
- + Attended seminar/ training on "SAR Assessment" on March 2021, 10:00 am at Prof. Dr. Haji Mahmood Memon Senate Hall MUET Jamshoro
- + Attended and organised as Final Year Project Committee Convener "Ingredients and Recipe of Project Thesis" webinar through MS Teams by Dr. Shoaib Rehman Soomro for 17ES on 13<sup>th</sup> April 2021.
- + Attended webinar for "How Machine Learning is Enabling New Smart Camera Applications» certificate presented by Dylan Zika, Product Manager, Arm – 29<sup>th</sup> April 2021
- + Attended "MATLAB EXPO 2021", held on May 4–5. covering 70+ technical talks from MathWorks engineers and leading industry experts, across 11 application areas and 2 MathWorks Automotive Conference tracks.
- + Completed certified "Machine Learning Onramp» course by Mathworks Training Services on 14<sup>th</sup> May 2021
- + Attended AI Tech Talk: "Optimized C Code Generation for Ultra-efficient tinyML Applications" on 25<sup>th</sup> May 2021 organised by Arm Software Developers AI Virtual Tech Talks series | Talk delivered by Johan Malm, AI Engineer in Imagimob Product Team (Imagimob AI is Specialized in Edge AI (TinyML) company Based in Stockholm, Sweden

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- + Attended tinyML Talks webcast: « What, Why and How of TinyML » , speakers : Aruna Kolluru, Chief Technologist for AI, Dell Technologies and Subhranshu Sekhar, SAP & Oracle Lead Architect, Dell Technologies ANZ on May 26, 2021.
- + Attended PEC Online 0.5 CPD Webinar « Young Engineers as Future Consultant » held on May 05, 2021.
- + Attended PEC Online 0.5 CPD Webinar " Massive Connectivity in 5G+ Networks for Smart Cities » held on June 01, 2021.
- + Attended PEC Online 0.5 CPD Webinar on " Blockchain for Integrity of Supply Chain" held on June 10, 2021
- + Attended PEC Online 1 CPD Webinar on « Indegenious entrepreneurship characteristics, cases and stories » on June 12, 2021
- + Attended PEC Online 0.5 CPD Webinar on "How to Start & Grow a Business - An introduction to PNIP Investment Readiness Program" on June 29 2021
- + Delivered a keynote talk on " Robotics & Automation in Health care" in Annual Cross Lab Workshop/ Conference by NCRA-HHRCMS LAB MUET on CONDITION MONITORING SYSTEMS,12-16<sup>th</sup> July 2021at USPCAS-W Auditorium, Mehran UET Jamshoro.
- + Attended AI Tech Talk: "Easy TinyML with Arduino: taking advantage of machine learning right where things are happening" on 20<sup>th</sup> July 2021 organized by Arm Software Developers AI Virtual Tech Talks series| Talk delivered by Massimo Banzi, Co-founder at Arduino.
- + Served as Judge in Interdepartmental Engineering Exhibition IEX-2021 in the category of Project Exhibition & Robotic Contest on 8<sup>th</sup> December 2021 at the Department of Electronic Engineering MUET Jamshoro in collaboration of IEEE IMS Society.
- + Was invited as Guest of Honor at Hands-on Workshop on Line Follower robot "AN INTRODUCTION TO ROBOTICS AND ITS PROMISING FUTURE 2.0" held on 7th Feb 2022 at Science and Technology Park, MUET Jamshoro organized by Tele commination Engineering Department in collaboration with IEEE IES Karachi Chapter, IEEE IMS MUET, IEEE RAS MUET &Techrotics Technologies Lab.
- + Organised "Microcontroller Based Project Exhibition" on 22<sup>nd</sup> April 2022 for 19ES Batch as part of their 5th-semester activity for the subject "Introduction to Embedded Systems as a subject teacher.
- + Conducted a "Product Development" session as resource person at National Expansion Plan NIC Jamshoro on 30th June 2022 for 2<sup>nd</sup> Cohort incubated startups.
- + Organised and coordinated a visit of Students of Final year and 3rd year from the Department of Electronic Engineering MUET Jamshoro for National Expansion Plan, National Incubation Center NEP-NIC Jamshoro on Friday, 5th August 2022.
- + Attended 8th IAB (Industrial Advisor Board) Meeting of Electronic Engineering department and Interactive Session between Industrial Experts and final year students on 22nd August 2022.

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- + Served as a judge in the final round for the 3<sup>rd</sup> cohort of NEP NIC Launchpad Jamshoro, on 24<sup>th</sup> August 2022 in collaboration with Punjab Information Technology Board (PITB) Incubation Wing.
- + Served as a judge at NIC Hyderabad for the world's largest startup competition for women and technology "She Loves Tech" for the Hyderabad Region round on 27<sup>th</sup> September 2022.
- + Organised 18ES Final Year Project Competition at the Department of Electronic Engineering MUET Jamshoro on 25-26<sup>th</sup> October 2022.
- + Organised and conducted "One hour interaction on FYPs" seminar as resource person for 19ES Batch at the Department of Electronic Engineering MUET Jamshoro on 14<sup>th</sup> November 2022.
- + Participated as a panelist in a Panel discussion on "WomenInTech: Challenges & Opportunities" at Science & Technology Park, MUET Jamshoro on 17<sup>th</sup> November 2022
- + Served as Poster Session Chair at the International Conference on Emerging Technologies in Electronics, Computing, and Communication (ICETECC'22) organized by the Department of Electronic Engineering MUET Jamshoro on 7-9<sup>th</sup> December 2022.
- + Organised and lead a visit for the faculty of Department of Electronic Engineering MUET to Civil Aviation Training Institute (CATI) Hyderabad for a 2-day CPD workshop on the topic "Present And Future Challenges With Regard To Innovation & Technological Advancements In Aviation" on 21-22<sup>nd</sup> December 2022.
- + Conducted a workshop/ seminar on "Edge Computing" as a resource person in TechFest Chapter 3 at AV room, IIT Building, MUET Jamshoro on 19<sup>th</sup> Jan 2023 organised by Evolve startup in collaboration with NEP NIC Jamshoro, ACM, IEEE IMS Society and Google DSC - MUET, Jamshoro.
- + Invited as guest of honor on 15<sup>th</sup> February 2023 and delivered the graduation speech at NEP NIC Jamshoro, Science and Technology Park by Circle Women Community for the digital literacy program supported by British Asian Trust and Citi Foundation.
- + Attended International Women's Day 2023 and delivered talk as a panelist in panel discussion "Dare to be resilient" at NIC Hyderabad on 8<sup>th</sup> March 2023 organized by Women Techmakers Hyderabad Pakistan (a program owned by Google) in collaboration with Google DSC - MUET, Jamshoro, CIRCLE Women, Evolve.
- + Served as final round judge for 4<sup>th</sup> cohort NEP NIC Launchpad Jamshoro, 14<sup>th</sup> March 2023 in collaboration with PITB Incubation Wing.
- + Served as a judge on 21<sup>st</sup> March 2023 in Entrepreneurship Startup Competition, of ZindagiPrize MUET JAMSHORO Campus round at Office of Research and Innovation & Commercialization ORIC-MUET Jamshoro.
- + Served as the Technical Session Chair on Day-1 and Tutorial Chair on Day-2 for the "Sound of Wellness: A centralized Dashboard and Music Prototype therapy for enhanced Healthcare Management" session conducted by Dr. Shama Siddiqui and Dr. Anwar Ahmed Khan during 7<sup>th</sup> International Multitopic ICT Conference (IMTIC23), held on 10-12<sup>th</sup> May 2023 jointly

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organized by Mehran University of Engineering and Technology and Sir Syed University.

- + Attended 1 CPD webinar on "Solar and Wind Power Potential In Pakistan" on 19<sup>th</sup> May 2023 organized by PEC, Pakistan.
- + Attended 1 CPD webinar on awareness of "Construction safety and management" on 7<sup>th</sup> June 2023 organized by PEC, Pakistan.
- + Attended 1 CPD webinar on "Chat GPT and Professional Integrity" on 23<sup>rd</sup> June 2023 organized by PEC, Pakistan.
- + Attended 1 CPD webinar on awareness of "Advanced Numerical techniques (FLAC) for the design of tunnels" on 13<sup>th</sup> July 2023 organized by PEC, Pakistan.
- + Conducted an online seminar on "Embedded Artificial Intelligence and Edge Computing" workshop as a resource person on 19<sup>th</sup> June 2023 organized by Zindagi Prize in collaboration with IEEE Karachi.
- + Attended tinyML Talks webcast: Unleashing the Power of the New XIAO ESP32S3 Sense: Tackling Anomaly Detection, Image Classification, and Keyword Spotting with TinyML by Marcelo Rovai, Co-Chair TinyML4D group on 13<sup>th</sup> June 2023.
- + Has successfully completed "Introduction to Embedded Machine Learning" an online non-credit course authorized by Edge Impulse and offered through Coursera on 10<sup>th</sup> July. <https://coursera.org/verify/GH9LLLFR3U68>

### **MEMBERSHIP & TASKS**

- +Life Time Member as Professional Engineer, Pakistan Engineering Council (PEC) Pakistan Engineering Council card valid upto 31<sup>st</sup> Dec 2023, Registration No: Electro/7164
- + Member PhD Country Directory (PCD), PCDNO:21726
- + Valued IEEE member for 5 years Professional
- + Valued IEEE member for 2 years Professional Entrepreneurship Exchange Community
- + Valued IEEE member for 3 years Professional IEEE Engineering in Medicine and Biology Society
- + Valued IEEE member for 2 years Professional Brain Community,
- + Valued IEEE member for 2 years Professional Digital Reality Community,
- + Member MUET's internal Patent Review Committee/ Board Mehran UET, Jamshoro
- + Member HEC Research Project Evaluation & Monitoring Committee at MUET.
- + FEECE eNewsletter Editing/ Reviewing Committee MUET Jamshoro.
- + Harassment Monitoring Officer from June 2016 to July 2018 for Protection against harassment of women at workplace
- + Convener, Final Year Project Committee at Department of Electronic Engineering MUET (2019-2022)

## **PROFESSIONAL MEMBERSHIPS**

- + Member Departmental Management Review Committee (DMRC) of ORIC, MUET
- + Member Departmental Management Review Committee (DMRC) of Electronic Engineering Department, MUET.
- + Member OBE-Program Committee at Department of Electronics
- + Alternate focal person from MUET for NGIRI- Ignite (2019,2020,2021)
- + Member UI Green Metric MUET Working Group
- + Member BoS, Dept of ES, MUET Jamshoro
- + Member BoS, Dept of ES, SU Jamshoro
- + Member Board of Faculties for FEECE MUET Jamshoro.
- + Member postgraduate SAR Assessment Team for QEC, MUET

## PUBLICATIONS

### PEER REVIEWED JOURNAL PAPERS

- + Paliyo T. · Baqai A. · Mukhtiar Ali Unar, "Fuzzy Logic based Data Retrieval system. October 2005." MUET Research J. of Eng & Tech. (MURJ), Vol. 29, No. 4, pp. 305-312, 2005.
- + A Baqai, FA Umrani, BS Chowdhry, "Design, Development and Implementation of the IR Signalling Techniques for Monitoring Ambient and Body Temperature in WBANs.", Mehran University Research Journal of Engineering & Technology 33 (3), 365-371, 2014.
- + A Baqai, FA Umrani, BS Chowdhry, "Experimental Study of Effect of Noise and Link Distance on Infra-Red Based WBAN", Sindh University Research Journal-SURJ (Science Series) 48 (2), pp : 371-376, 2016.
- + A Baqai, FA Umrani, BS Chowdhry , "LED Based Optical Wireless Communication System for WBAN", Mehran University Research Journal of Engineering & Technology 35 (4), 667-672, 2016.
- + A., Memon, A.R., Memon, K. et al, "Kinect as a Generalised Interface for Games and PC Control, Baqai,. Wireless Pers Commun (2017) Vol 95, Issue 2 pp:617-629. Doi:10.1007/s11277-016-3914-4. (IF= 0.97)
- + Attiya Baqai · Fahim Aziz Umrani · Bhawani S. Chowdhry , "A Novel Protocol with Patient and Node Identification for Optical WBAN with Inherent Security and Interference Rejection", Wireless Pers Commun (2017) Vol 95, Issue 4, pp:4211-4224 .DOI: 10.1007/s11277-017-4075-9 (IF= 0.970)
- + Sanyan Kalhoro, Attiya Baqai, Muhammad Arif, "Design of A Low Cost Health Status Indication Device using Skin Conductance Technique", Sindh University Research Journal-SURJ (Science Series) 49 (2), pp : 309-316, 2017.
- + Attiya Baqai, Khuhed Memon, Azam Rafique Memon, Syed Muhammad Zaigham Abbas, "Interactive Physiotherapy: an application based on Virtual Reality and Bio-feedback", Wireless Pers Commun (Feb 2018), S.I: Technological Advancements in Wireless & Optical Communication Systems, DOI : 10.1007/s11277-018-5382-5, Wireless Personal Communications, 106(4), 1719-1741 (IF=1.2)
- + Hyder Bux Mangrio, Attiya Baqai, Fahim Aziz Umrani and Rashid Hussain, "Effects of Modulation Scheme on Experimental setup of R-G-B LEDs based

- Underwater Optical Communication", *Wireless Pers Commun* (Apr 2018), 106(4), 1827-1839, S.I: Technological Advancements in Wireless & Optical Communication Systems, DOI: 10.1007/s11277-018-5718-1 (IF= 1.2)
- + Faisal A. Dahri, Hyder Bux Mangrio, Attiya Baqai and Fahim Aziz Umrani "Experimental Evaluation of Intelligent Transport System with VLC Vehicle-to-Vehicle Communication", *Wireless Pers Commun* (Apr 2018), S.I: Technological Advancements in Wireless & Optical Communication Systems, 106(4), :1885–1896, DOI : 10.1007/s11277-018-5727-0 (IF= 1.2)
  - + Asma Channa, Attiya Baqai, Rahime Ceylan, "Design and Application of a Smart Diagnostic System for Parkinson's Patients using Machine Learning", (*IJACSA*) *International Journal of Advanced Computer Science and Applications*, Vol. 10, No. 6, pp: 563-571, June 2019. (Scopus Indexed)
  - + F.A.Dahri, F.A.Umrani, A.Baqai et al., "Design and implementation of LED–LED indoor visible light communication system", *Physical Communication* (Elsevier) (2019)100981, <https://doi.org/10.1016/j.phycom.2019.100981> (IF=1.45)
  - + Baqai, A., Talpur, A., Umrani, F.A. et al. Design, Implementation and Evaluation of IR-Based Tagging System for RTLS. *Wireless Pers Commun* (2020). <https://doi.org/10.1007/s11277-020-07284-4> (IF=1.061)
  - + Abdullah Memon, Syed Mudassir Kazmi, Attiya Baqai and Fahim Aziz Umrani, "Design and Experimental Analysis of Touchless Interactive Mirror using Raspberry Pi" *International Journal of Advanced Computer Science and Applications(IJACSA)*, 11(5), 2020. (Scopus & ESCI Indexed) <http://dx.doi.org/10.14569/IJACSA.2020.0110562>
  - + Anzalha Narejo, Attiya Baqai, Neha Sikandar, Absar Ali, Sanam Narejo, "Physiotherapy: Design and Implementation of a Wearable Sleeve using IMU Sensor and VR to Measure Elbow Range of Motion", (*IJACSA*) *International Journal of Advanced Computer Science and Applications*, Vol.11, No. 9, October 2020. DOI: [10.14569/IJACSA.2020.0110953](https://doi.org/10.14569/IJACSA.2020.0110953) (Scopus & ESCI Indexed)
  - + BAQAI, Attiya; JAN, Maria; MAHER, Rafay Rasheed. Optical Braille Blocks for Visually Impaired Elementary Education. *Mehran University Research Journal of Engineering and Technology*, [S.I.], v. 40, n. 1, p. 205 - 214, Jan. 2021. ISSN 2413-7219. doi: <http://dx.doi.org/10.22581/muet1982.2101.18>.
  - + Ahmed, Z., Panhwar, S. Q., Baqai, A., Umrani, F. A., Ahmed, M., & Khan, A. (2022). Deep learning based automated detection of intraretinal cystoid fluid. *International Journal of Imaging Systems and Technology*, 32(3), 902–917. <https://doi.org/10.1002/ima.22662> (IF=2)
  - + Khan, F., Umrani, F., Baqai, A. and Ijaz, M., 2022. A Novel Double-Sided Pulse Interval Modulation (DS-PIM) Aided SIM-OFDM for 6G Light Fidelity (LiFi) Networks. *Electronics*, 11(21), p.3579. <https://doi.org/10.3390/electronics11213579> (IF= 2.69)

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- + Palijo T. · Baqai A. · Mukhtiar Ali Unar, "Fuzzy Logic implementation of SQL for the database" *Proceedings of the National conference on*

- « Information Technology and applications » NCITA pp 90 – 97, 21-22 April 2005, Balochistan university of Informaton Technology and Management Sciences (BUIIMS) Quetta
- + Nazish Pervez Bhatti · Attiya Baqai · Bhawani Shankar Chowdhry · Mukhtiar Ali Unar, "Electronic Hand Glove for Speech Impaired and Paralyzed Patients", (24th IEEE Multi-Topic International Symposium April 08 & 09, 2009 Karachi (PC Hotel))
  - + Dileep kumar · Bhawani Shankar Chowdhry · Attiya Baqai · Bhagwan Das, "Intelligent Heart Disease Recognition using Neural Networks". (24th IEEE Multi-Topic International Symposium April 08 & 09, 2009 Karachi (PC Hotel)).
  - + M Shazor, A Baqai, A Ali Patoli, Anti-Electricity Theft System, IEEE Multi-Topic International Symposium 2011, 16 & 17 march 2011, PC Hotel Karachi.
  - + PhD consortium: "Infra-Red based Wireless Body Area Networks for monitoring Vital signs", pp: 54-56 in WSN4DC'13 Poster & PhD consortium proceedings. 1st International Conference on Wireless Sensor Networks for Developing Countries (WSN4DC'13) held on 24-26 April 2013 at MUET Jamshoro, Pakistan.
  - + Sanyan Kalhoro, Attiya Baqai, "Emotion/State indicator using Skin Conductance", poster paper in 4th International Multi-Topic Conference IMTIC15 held on February 11-13, 2015 at MUET Jamshoro.
  - + HB Mangrio, A Baqai, R Hussain, F Umrani, F Ahmed, "Experimental demonstration of RGB LED-based Underwater Optical Communication", SCONEST 2016, IEEE 5th Student Conference on Engineering Sciences and Technology, 14-15 December 2016 At Hamdard University Main Campus, Karachi. (BEST PAPER AWARD).
  - + Attiya Baqai, Khuhed Memon, Azam Rafique Memon, Syed Muhammad Zaigham Abbas, "Interactive Physiotherapy, an application based on Virtual Reality and Bio-feedback", 2nd Global Conference on Wireless and Optical Communications GCWOC'17, Malaga (Spain) during 18th-20th September 2017.
  - + Hyder Bux Mangrio, Attiya Baqai, Fahim Aziz Umrani and Rashid Hussain, "Effects of Modulation Scheme on Experimental setup of R-G-B LEDs based Underwater Optical Communication", 2nd Global Conference on Wireless and Optical Communications GCWOC'17, Malaga (Spain) during 18th-20th September 2017. (This paper received **HEC Travel Grant**)
  - + Faisal A. Dahri, Hyder Bux Mangrio, Attiya Baqai and Fahim Aziz Umrani "Experimental Evaluation of Intelligent Transport System with VLC Vehicle-to-Vehicle Communication", 2nd Global Conference on Wireless and Optical Communications GCWOC'17, Malaga (Spain) during 18th-20th September 2017. (This paper received **HEC Travel Grant**)
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- + Attiya Baqai, Maria Jan and Rafey Rasheed Maher , "Optical braille blocks for visually impaired elementary education", 3rd Global Conference on Wireless and Optical Communications GCWOC'18, Malaga (Spain) during 1st-3rd October 2018.
- + Attiya Baqai, Anum Talpur, Fahim Aziz Umrani, Inamullah Lakho, "Design and Implementation of Infra-Red Tagging system for Lab Inventory", 3rd Global Conference on Wireless and Optical Communications GCWOC'18, Malaga (Spain) during 1st-3rd October 2018.
- + Ahsan Rashid, Sheeraz Hussain, Hamza Soomro, Burhan Aslam, Attiya Baqai, Usama Yar, "Design and Implementation of Digital Spirometer for monitoring lungs health status", International Marmara Scientific Research and Innovation Congress 21-22 August 2021/ Turkey Istanbul
- + Dushyant and Dr. Attiya Baqai, "Detection of respiratory dysfunction with wearable sensor using tinyml", 6th international New York Conference on evolving trends in inter-disciplinary research & practices, proceedings book ,Liberty Publications-2022, (pp. 580–583). ISBN: 978-1-955094-20-7, April 3-5, 2022 Manhattan, New York City.
- + Paras, Dr. Attiya Baqai, 2022. "Machine learning based hand tremor prediction using IMU Sensor". In: 3. International Dicle Scientific Research and Innovation Congress 26-27 November 2022 Diyarbakir, Turkey. Organized by International Science and Art Research Center (ISARC), pp. 256-259. Available at: 6dc816\_05b02620945347b89ceb384786bca730.pdf (isarconference.org)
- + Memon, Komal, Fahim Aziz Umrani, Attiya Baqai, and Zafi Sherhan Syed. "A Review Based On Comparative Analysis of Techniques Used in Precision Agriculture." In 2023 4th International Conference on Computing, Mathematics and Engineering Technologies (iCoMET), pp. 1-7. IEEE, 2023.

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- + F Ahmed, HA Zaidi, SWH Rizvi, A Baqai, BS Chowdhry, "Electronic Automatic Gear Shifting System for a Motorcycle" International Multi Topic Conference (IMTIC '08), Wireless Networks, Information Processing and Systems, Publisher: Springer-Verlag, pp.3-10, Vol. 20, 2008. DOI: 10.1007/978-3-540-89853-5\_3 · Source: DBLP ·
- + Asma Channa, Rahime Ceylan, Attiya Baqai, "Machine Learning for Analyzing Gait in Parkinson's Patients Using Wearable Force Sensors", International Conference on Intelligent Technologies and Applications INTAP 2018, OCTOBER 23–25, Islamia University Bahawalpur (IUB), CCIS 932, pp. 548–559, 2019, publisher: Springer Nature Singapore Pte Ltd. 2019, Book: Intelligent Technologies and Applications, Chapter No: 47, Chapter DOI: [https://doi.org/10.1007/978-981-13-6052-7\\_47](https://doi.org/10.1007/978-981-13-6052-7_47)
- + Faisal Khan Khaskheli, Fahim Umrani, Attiya Baqai, "Chapter 3: An Introduction to LiFi and Review of Prototypes Designed on FPGA and Other Hardware", Design, Implementation, and Analysis of Next Generation

92-222-2772250-73 (Ext : 6214) | [attiya.baqai@faculty.muet.edu.pk](mailto:attiya.baqai@faculty.muet.edu.pk)

web : <http://attiyabaqai.weebly.com/>

Linkedin : <https://www.linkedin.com/in/attiya-baqai-a42488149/>

Optical Networks: Emerging Research and Opportunitie, Waqas Ahmed Imtiaz (Abasyn University, Pakistan) and Rastislav Róka (Slovak University of Technology in Bratislava, Slovakia), DOI: 10.4018/978-1-5225-9767-4. By IGI Global, 2020. 69-99. Web. 12 Jun. 2019.

- + Hassan Abbas, Azka Rizwan, Attiya Baqai, Daniyal Ahmed, Taha Hussain, Munazza Naeem, Adeel Raja, (2020) An Android Based Assessment Tool for the Visually Impaired. In: Karrupusamy P., Chen J., Shi Y. (eds) Sustainable Communication Networks and Application. ICSCN 2019. 30-31st July 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 39. pp 1-11, Springer, Cham, DOI: [https://doi.org/10.1007/978-3-030-34515-0\\_1](https://doi.org/10.1007/978-3-030-34515-0_1)

### BOOKS PUBLISHED

- + Lab book on Neural Networks & Fuzzy Logic with MATLAB, Co-authored Prof. Dr. M.A Unar, 2009, ISBN: 978-969-8680-25-1.
- + Lab Book of Embedded System Design, Co-authored , Engr Mehnazar Syed, Engr Kekashan Asma, Dr Ahsan Ursani, 20, ISBN: 978-969-8680-31-2
- + Lab Book of Embedded System Design, Co-authored , Engr Mehnazar Syed, Engr Kehkashan Asma, Dr Ahsan Ursani, 2013, ISBN: 978-969-8680-29-9 (Revised Edition)

### PATENTS

- **Granted by IPO Pakistan** on 26<sup>th</sup> July- 2018
- + Patent Application No : 116/2016, Patent no : 142695 "A SYSTEM OF SECURE TRANSMISSION OF PHYSIOLOGICAL DATA FOR WIRELESS BODY AREA NETWORKS " by Inventors Dr. Attiya Baqai, Dr. Fahim A. Umrani & Dr. Bhawani S. Chowdhry .
- Complete Specification Application filed in IPO Pakistan in March 2019.
- + Patent Application No: 124/2018, Information display on the surface of mirror with enhanced interactivity by Inventors: Engr. Mudassir Kazmi, Dr. Attiya Baqai, Engr. Abdullah Memon, Dr. Fahim Umrani
- + Patent Application No: 163/2018, Optimal Tactile Display by Engr. Abdullah Memon, Dr. Attiya Baqai, Engr. Mudassir Kazmi
- **Granted by USPTO** on 18<sup>th</sup> Jan 2022
- + Publication No: US-2019-0347961, Published by US Patent Office on 14 November 2019. Title: Optimal Tactile Display". Inventors: Engr. Abdullah Memon, Dr. Attiya Baqai, Engr. Mudassir Kazmi

92-222-2772250-73 (Ext : 6214) | [attiya.baqai@faculty.muett.edu.pk](mailto:attiya.baqai@faculty.muett.edu.pk)

web : <http://attiyabaqai.weebly.com/>

Linkedin : <https://www.linkedin.com/in/attiya-baqai-a42488149/>

- + Memon, Abdullah, Attiya Baqai, and Mudassir Kazmi. "Optimal tactile display." U.S. Patent 11,227,510, issued January 18, 2022. <https://patents.google.com/patent/US11227510B2/en>

### REVIEWER

- + Referee for Mehran University Research Journal.
- + Reviewer for Journal of the Optical Society of America A.(IF=2.18)
- + Reviewer for Journal Wireless Personal Communications-Springer (IF=1.06)
- + Mathematical Problems in Engineering by Hindawi (IF=1.009)
- + Reviewer for Journal of Developmental Neurorehabilitation, Taylor & Francis Group (IF=1.707)
- + Reviewer for IEEE Internet of Things Journal (IF=10.238)
- + Reviewer for Research proposal under the Center of Excellence Grants competition (COE) by HEC in collaboration with World Bank Group.
- + International Multi-Topic ICT Conference (IMTIC08, IMTIC12, IMTIC13, IMTIC15 & IMTIC18),
- + 1st International Conference on Wireless Sensor Networks for Developing Countries (WSN4DC'13)- MUET Jamshoro
- + Global Conference on Wireless and Optical Communications- Malaga Spain (GCWOC'16, GCWOC'17, GCWOC'18, GCWOC'19, GCWOC20)

## SKILLS

### COMPUTER SKILLS

- + Matlab , LabView, Pspice
- + OrCAD, Circuit Maker, Electronic WorkBench , MultiSim, MELSEC MEDOC, KEIL software, PINNACLE, LCD simulator, AutoCAD, Proteus, Config Wizard, Atmel Studio, Arduino, Processing, IBM Q.
- + Computer Languages: Basic, Fortran, C, C++, Visual Basic, Assembly Language, Embedded Assembly & C language, Python, ML for Embedded Systems
- + Operating Systems : Windows 10
- + Microcontroller & SBC : AVR, Arduino, Raspberry Pi
- + Practical experience with: Microsoft Word, Microsoft Excel, PowerPoint, Microsoft Visio, and Microsoft Publisher, Microsoft Outlook Express.

### LINGUISTIC SKILLS

- + English, Sindhi, Urdu

## RESEARCH AREAS

- + Wireless Body Area Networks, Wireless Communications, Optical Communication, Artificial Neural Networks, Fuzzy Logic Control, Assisted Living Technology, Embedded System Design, Virtual Reality, Machine learning, Deep Learning, Edge Computing and Quantum Computing.

## SUPERVISION

92-222-2772250-73 (Ext : 6214) | [attiya.baqai@faculty.muet.edu.pk](mailto:attiya.baqai@faculty.muet.edu.pk)

web : <http://attiyabaqai.weebly.com/>

Linkedin : <https://www.linkedin.com/in/attiya-baqai-a42488149/>

- + Supervising projects in the field of Embedded systems and Neural Networks & Fuzzy logic-fill now have supervised 50+ UG projects/theses 6 ME projects, co-supervising three PhD projects and advisor in 4 startups.

#### References :

**Prof. Dr. B. S. Chowdhry**, Professor Emeritus, Department of Electronic Engineering.

Mehran University of Engineering & Technology, Jamshoro Sindh Pakistan

Tel: +92-22-2771558

Fax: +92-22-2771382

Email [bsc\\_itman@yahoo.com](mailto:bsc_itman@yahoo.com), [c.bhawani@ieeee.org](mailto:c.bhawani@ieeee.org), [bhawani.chowdhry@faculty.muet.edu.pk](mailto:bhawani.chowdhry@faculty.muet.edu.pk)

**Professor Dr. Mukhtiar A. Unar**, Dean Faculty of Electrical, Electronics & Computer Engineering

Mehran University of Engineering & Technology, Jamshoro Sindh Pakistan,

Email: [mukhtiar.unar@faculty.muet.edu.pk](mailto:mukhtiar.unar@faculty.muet.edu.pk)