

PERSONAL INFORMATION

Umar Farooq

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~~Date of birth: 22/08/1988 | Nationality: Pakistani~~

EDUCATIONAL BACKGROUND

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| 2021–2024 | PhD (Electrical, Material and Nanotechnology Engineering)
Sapienza Università di Roma, Italy. |
| 2018 – 2019 | MS (Advance Electronics System Engineering)
Université de Bourgogne Dijon, France. |
| 2009 – 2013 | BS (Electronic Engineering)
Baluchistan University of Information Technology Engineering and Management Sciences (BUITEMS). |

WORK EXPERIENCE

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| April 2016 – Study leave Dec 2021 | Lecturer
Department of Electronic Engineering.
Government College of Technology, Quetta, Pakistan. |
| April 2014 – April 2016 | Project Engineer
MAK PUMPS, Pakistan.

Modelling and implementation of cloud-based remote controlling of water tube-wells. The objective of the project was to design low cost RTU (Remote Telemetry Unit) to control electromagnetic valves and water pumps. Furthermore, measures the water level, power consumption of the motors and transfer the measured data to the database. |
| Jan 2013 – Jan 2018 | Co-founder
Insectronics, Pakistan.

A small organization that provides students supervision for their projects. The mission of this organization was to encourage students to build their ideas into reality and facilitate them with tools, equipment, and proper guidance. |

INTERNSHIPS

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| May 2019 – Oct 2019 | Intern
CHArt Laboratoire Université Paris 8 Vincennes-Saint-Denis

Exploratory study of the use of connected textiles, E-Textile and various types of sensors for creating Augmented books. |
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TRAININGS AND WORKSHOPS

July 9 – July 12, 2023	FLEPS 2023 The IEEE International Conference on the topics of Organic/Inorganic Electronics and Sensors, Emerging Materials for Flexible and Printable Systems, Advanced Manufacturing Techniques, Hybrid Soft/Smart/Flexible/Disposable/Reusable Sensors held in Boston, Massachusetts, USA.
Nov 28 – Nov 29, 2022	Perospace 2022 Focus on Perovskite Solar Module Fabrication & Commercialization and Space Application of Perovskite Solar Photovoltaics Rome Italy.
Sept 21 – Sept 24, 2022	NanoInnovation 2022 Focus in cross-cutting way on different topics, related to Micro-and Nanotechnologies Rome Italy.
June 13, 2019	JCJC Conference 2019 Organized by the IFRATH, the Federative Institute for Research on Technical Aids for People with Disabilities Paris France.
June 10 – June 12, 2015	Dynamics of Supervisor and Supervisee Relationship Organized by the Higher Education Commission (HEC) & BUITEMS Quetta Pakistan.
Nov 19 – Nov 20, 2015	Data Analysis Techniques using SPSS and STATA Organized by International Maize and Wheat Improvement Centre & BUITEMS Quetta Pakistan.
Sep 15 – Sep 16, 2015	Let's Sketch with Arduino Self-organised workshop for undergrad students of Electronics and Computer Engineering at BUITEMS, to provide hands-on experience on Arduino platform.

PROJECTS

Les Doigts Qui Rêvent Augmented Books	Teaching a visually impaired or blind peoples, it is very important to clearly explain all visual Things and materials for this it is better that we should use visual cues with audio cues. For achieving this our team designed an augmented book with different scenarios sensing and having smart phone connectivity capability.
Rotor controller unit	The project was designated for SUPARCO under Pakistan national student satellite program (PNSSP). In this project we designed the ground station rotor controller unit which control the direction and rate of rotation of the rotor motors using a computer command. Rotor pointed the ground station antennas to the PNSS-1 satellite to maximize the strength and quality of the signal being received from the satellite. The precision for the position was developed with feedback by magnetic position sensor.
Implementation of Electroencephalogram (EEG) for brain computer interfacing	Non-invasive brain-computer interfaces provide an optimal solution for the interaction between physically impaired individuals and the real world. In this work, EEG based robot is designed and implemented by using a device that is used to acquire EEG signals and transmit it to the computer. The signal features are extracted using computer software and converted into meaningful instructions for the robot.

SKILLS

Linguistic skills	• Urdu (national language) • English (professional proficiency)
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Development Skills	• MATLAB/Simulink • Xilinx ISE • NI Labview • Arduino IDE • MickroElektronika/Open STM32/Arduino IDE/GCC Compiler/Code Worrier/Keil µvision/ATMEL Studio 7 • LTSpice/Proteus • KiCAD/Altium
Programming Languages	• VHDL • C/C++ • Assembly Language (8051, PIC, AVR, ARM) • Python • Visual Basic .NET • SQL • HTML

PUBLICATIONS

Published	Ali, Babar, Negin Faramarzi, Umar Farooq , Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, Alessio Tamburrano, and Maria Sabrina Sarto. "Graphene-based Smart Insole Sensor for Pedobarometry and Gait Analysis." IEEE Sensors Letters (2023).
Published	Umar Farooq , Ali Babar, Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, and Maria Sabrina Sarto. "Development of Graphene-based Flexible Thermocouples for Wearable Applications." IEEE International Conference on Flexible, Printable Sensors and Systems (FLEPS 2023) Boston, Massachusetts, USA.
Published	Umar Farooq , Ali, Babar, Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, and Maria Sabrina Sarto. "Development of Graphene-based Flexible Thermocouples for Wearable Applications." IEEE International Conference on Flexible, Printable Sensors and Systems (FLEPS 2023) Boston, Massachusetts, USA.
Published	Umar Farooq , Ali, Babar, Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, and Maria Sabrina Sarto. "Graphene-based Formable Thermoelectric Generators for Heat Recovery Systems." IEEE Nanotechnology Materials and Devices Conference (NMDC 2023) Paestum (Salerno), Italy.
Published	S. L. Mansouri, Ali Babar, Negin Faramarzi, Umar Farooq, A. G. D'Aloia; A. Tamburrano, Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, and Maria Sabrina Sarto. "Flexible Broad-Range Graphene-based Piezoresistive Pressure Sensor" IEEE Nanotechnology Materials and Devices Conference (NMDC 2023) Paestum (Salerno), Italy.
Published	Ali Babar, Umar Farooq , Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, and Maria Sabrina Sarto. "Performance Enhancement of Graphene-Based Biopotential Electrodes through Electrical Contact Geometry Optimization." IEEE International Symposium on Measurements and Networking Conference M&N (2024) Rome, Italy.
Published	Samira Lakouraj Mansouri, Babar Ali, Negin Faramarzi, Umar Farooq , Hossein Cheraghihi Bidsorkhi, Alessandro Giuseppe D'Aloia, Alessio Tamburrano, Sarto Sabrina Maria. "Highly Responsive Double-Layered Graphene-Based Piezoresistive Pressure Sensor for Wearable Applications." IEEE Sensor Journal.
Accepted	Aiman, Umar Farooq , Ali, Babar, Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, "iThermoGraph: IoT-Integrated Graphene-Based Thermocouple for Real-Time Temperature Monitoring." IEEE International Conference on Flexible, Printable Sensors and Systems (FLEPS 2025) Singapore .
Under Revision	Umar Farooq , Ali, Babar, Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, and Maria Sabrina Sarto. "Graphene-based Flexible Multimodal Biosensor for Cardiorespiratory Signals Acquisition." IEEE Open Access.

ADDITIONAL INFORMATION

Honours and Awards

2017 Scholarship by Higher Education Commission, Pakistan.

I got this scholarship out of 4000 applicants. It was an incredible honour to be selected as one of the 200 recipients among such a competitive field of talented individuals. The recognition and support that this scholarship represents will have a profound impact on my educational journey and future endeavours.

2013 Registered Engineering of Pakistan Engineering Council.

PEC registration serves as a validation of qualifications, competence, and adherence to professional standards in the engineering profession. It demonstrates that I have met the educational and experience requirements set by the regulatory body, ensuring that I possess the necessary skills and knowledge to practice engineering responsibly and ethically.

2013 Distinction for 6th position/120 in BS (Electronic Engineering).

This shows the exceptional performance in my coursework, projects, and examinations. This achievement reflects not only my high grades but also my comprehensive understanding of electronic engineering concepts and the ability to apply them effectively.

2009-2013 Merit scholarship for BS (Electronic Engineering), BUITEMS, Pakistan.

This scholarship was granted to the students in each semester to getting top ten position throughout the class.

References

Prof. Alessandro Giuseppe D'Aloia
Prof. Dominique Archambault

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