RESUME

Personal Information

Surname, Name	Al-Jawary, Zaid
Date of birth	1982
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Work Experience

02.2018 – 05.2022

Doctoral Student and Researcher
Department of Electronics Technology, University of Valladolid (UVa)
Valladolid (Spain)

I have been working on a power converter controller for Renewable Energy. The work involves the proposed new topology to integrate the photovoltaic (PV) panels inside the Modular Multilevel Converter (MMC) to improve the conversion efficiency in terms of large-scale applications. The modules are simulated and analyzed deeply with MATLAB/Simulink and validated by real-time simulation by synthesis of the MMC with FPGA. The research works to build and upgrade the power controller of the MMC for PV application in partnership with the Deeper research group at the University of Valladolid.

My tasks:

- Implement and validate the distributed PV panels over the converter topology to increase the efficiency and performance of both the PV power energy and the MMC converter.
- Proposed and implemented new modulation method can manage the instantaneous change in voltage level due to the irradiance change to decrease the internal current losses.
- Design and simulate a module to get experimental results in a real-time simulator.

09.2010 – 09.2018 **Research Assistant and Lecturer**
Department of Information Technology, University of Human Development (UHD)
As Sulaymaniyah (Iraq)

I was the head assistant for the computer science department (Department's Decider) for three years as assistant manager for the Information Technology Department.

My task:

- Lecturing subjects in theory and practice for the 2nd and 3rd stages of the IT department and computer science. The subjects included (advanced computer networking, digital circuit design, and English for computer science).
- Supervised more than 10 undergraduate projects in image processing, network design, and IoT.
- In the department management, I have a different contribution to committees like lecturers' assessment and quality insurance.
- Participating as a management member in the college of science for final year exam committees for four years 2011 2014 and 2015, respectively.
- Collaborated with other colleagues to ensure better teaching processes, and utilized my knowledge of power and distribution systems, circuit calculations, and instrumentation.
- Build and refine the power control architecture with MATLAB, FPGA programming with VHDL, interface programming with C language, assembly programming, and widely used tools such as oscilloscopes, function generators, and LCR meters.

06.2014 – 10.2014 **Fulbright Visiting Scholar Program**
University of Delaware (UD)
Newark (USA)

This program is one of the United States Cultural Exchange Programs and aims to exchange multidisciplinary expertise with Iraqi University staff to bring cultures closer together and to share new ideas and thoughts. This includes many seminars on resource management, project development in the pure scientific sector, and financial management and economics.

My task:

- Participated in the research program for developing the Iraqi university.
- Engaged with different lectures and researchers for idea exchange to develop the educational reality in Iraq.

01.2010 - 01.2012 **Transmission Engineer**
KOREK TELECOM - Mobile Phone Operator Company
Mosul (IRAQ)

Works in the transmission branch, which is in charge of building transmission systems for cellular networks.

My task:

- Created and implemented test plans.
- Worked to create improvements that optimized tower connections.
- Accurately diagnosed and directed system issues.
- Managed the diagnosis and repair of the Micro-wave connection.
- Collaborated with other engineers to ensure safe production processes and solve network connection issues.

02.2008 - 07.2009 **Research and Teaching Assistant**
Microprocessor laboratory, University Technology Malaysia, Faculty of Electrical Engineering.
Johor Bahru (Malaysia)

As an instructor, I was appointed as a mentor to assist the professor in charge of the laboratory with experimental execution and ensure that the students knew the measures in the experiments. Basically, the students learned how to program the 8086-microprocessor module by using assembly language.

My task:

- Responsible for configuring the laboratory equipment.
- Managing and implementing undergraduate student laboratory for Microprocessor subject to apply some experiments for Motorola processor.

01.2006 – 09.2007 **Teaching Assistant**
Electronic and Communication Laboratory, Mosul University, Faculty of Electrical and Communication Engineering.
Mosul (Iraq)

Employed as a tutor in the communication and electronic laboratory. The topics covered are fundamental modulation methods and filter designs.

My task:

- Managing and implementing undergraduate student laboratories for electronic and communication subjects.
- Preparing the experiment syllabus for the computer, communication, and electronic departments.

Education Degree

02.2018 – 05.2022

Doctoral of Industrial Engineering
Ph.D, in Power Electronic Engineer
University of Valladolid (UVa)
Valladolid, Spain.

Thesis Title: **"**Study and Evaluation of Distributed Power Electronic Converters in Photovoltaic Generation Applications**"**

Development environment MATLAB/Simulink, Simulation Test, Modeling System, and Real-Time Simulator**.**

Tasks

- Proposed new topology of PV panel strings distributed over MMC.
- New modulation method, Local-Carrier PWM (LC-PWM), for controlling MMC switches.
- Remove the effects of the internal current for better converter efficiency and increased the application performance.

Results

- Increases the performance of the MMC to 99%.
- The efficiency of conversion increased to 99.1% due to integrating the PV panels directly to MMC.
- The circulating current effects eliminating due to the new modulation method LC-PWM.

Qualification Excellent with Honor.

11.2007 - 08.2009

Master of Engineering
MEng in Electrical-Electronics & Telecommunications
University of Technology Malaysia (UTM)
Johor Bahru, Malaysia.

Thesis title: "Spectrum Investigative Model for Sharing Analysis Between IMT-Advanced Systems and FSS Receiver."

Development environment MATLAB/Simulink, MATLAB function, ATDI (ICS-Telecom) software, and Microwave office (AWR).

Tasks

- Search and propose the best separation distance for deploy Fixed Satellite Service (FSS) receiver without any impact of mobile system.
- Apply mitigation technique to prevent blocking system.

Results

- Locate the exact distance to separate the system communication without any interruption in the urban area, terrestrial open area, and a high-density area.
- Proposed a mitigation technique by covering the FSS with epically plastic martial to prevent any signals block under different circumstances.

Qualification Excellent with Honor.

10.2001 - 07.2005	**Bachelor in Faculty of Engineering** **B.Sc. in Computer Engineering.** University of Mosul (UoM) Mosul, Iraq
Bachelor thesis	"Parallel to Serial and Serial to Parallel Converter by using a Micro-Controller"
Development environment	C & C++ programming, Assembly programming, MATLAB/Simulink
Tasks	• Study the behavior of the data path in the computer parallel and serial ports. • Study and explore different types of Micro-Controller.
Results	• Implement in an experimental environment by use of a computer's serial port to connect devices that need a parallel link for an interface and vice versa, such as a printer. • A physical coded port was developed that can be used as a port interface for serial and parallel data transfer.

Language Courses

11.2007 – 04.2008	**English Course by SPACE institue (Intermediate, Advanced) Level.** Unversity Technology Malaysia, Malaysia
02.2019 – 05.2019	**Spanish course by Centro de idiomas (A1)** Universidad de Vallladolid, Spain

Languages

Arabic	Native
English	Fluent
Spanich	Basic

Skills

IT-Skilles	Microsoft Office (Word, Excel, Power Point, Visio), MATLAB/Simulink, Verilog and VHDL for hardware modeling, Packet tracer for network design.
Social skills	Cooperative, good self-organization, a high sense of responsibility, team spirit, resilience, ambition, a high level of initiative and skills
Certifications	CCNA, ICT, IELTS, Profissional Development by IMFAHE fundation.
Driving license	International driving license type (B)

Publications

➢ International Journals

1. *"Control of a Grid Connected MMC Based Distributed PV System with Individual MPPT". Electrical Power Systems Research, **2022**, in Proceed.*

2. *"Local Carrier PWM for Modular Multilevel Converters with Distributed PV Cells and Circulating Current Reduction". Energies* **2020**, *13*, 5585.

3. "*Possible Lensing Schemes for Fiber-optic Coupling Improvement"*. Journal of theoretical and applied information technology (E-ISSN 1817- 3195 / ISSN 1992-8645).15th May **2018**. Vol.96. No 09

4. "*Study of Challenges and Possibilities of Building and Efficient Infrastructure for Kurdistan Region of Iraq"*. UHD Journal of Science and Technology | May **2018** | Vol 2 | Issue 2

5. *"Super Capacitor Electronic Circuit Design for Wireless Charging"* Int. J. Adv. Appl. Sci., vol. 7, no. 2, p. 191, **2018**, doi: 10.11591/ijaas.v7.i2.pp191-198.

6. *"Using FPGA Design and HIL Algorithm Simulation to Control Visual Servoing"* Int. J. Adv. Appl. Sci., vol. 7, no. 2, p. 168, **2018**, doi: 10.11591/ijaas.v7.i2.pp168-176.

7. *"Link-to-system MIMO interference analysis for LTE coexistence in 2.6 GHz frequency band"* Int. J. Appl. Eng. Res., vol. 12, no. 15, pp. 5226–5233, **2017**.

8. *"Irreversible biometric template protection by trigonometric function" Int. Rev. Comput. Softw.*, vol. 11, no. 12, pp. 1138–1146, **2016**, doi: 10.15866/irecos.v11i12.11003.

9. "*Sharing and Coexistence between the Mobile Service and Terrestrial – Digital Video Broadcasting in the 790862 MHz Frequency Band*". International Journal of Advance Research, IJOAR.Org Volume 3, Issue 2, February **2015**, online: ISSN 2320-9119

10. *"Spectrum Investigation for Sharing Analysis between BWA System and FSS Receiver".* Journal of theoretical and applied information technology (E-ISSN 1817- 3195 / ISSN 1992-8645). 20th November **2015**. Vol.81. No.2

11. *"Irreversible Biometric Template Protection by Trigonometric Function" International* Review on Computers and Software (I. RE.CO. S.), Vol.11.

12. "*Design and Implementation of a Microstrip Patch Antenna for WLAN 802.11b Communication Standard"*. International Journal of Multidisciplinary and Current Research, ISSN: 2321-3124, Vol.3 Aug.**2015**.

13. "*Rectangular Microstrip 5.8GHz Antenna Vs Slotted version design and performance*". International Journal of Enhanced Research in Science Technology & Engineering, ISSN: 2319-7463, Vol. 4 Issue 2, Feb.-**2015**, pp: (139-145).

➢ International Conferences

1. "*Design Wireless Communication System to Cover Specific Area by Using HAPS (SULAYMANIYAH - IRAQ AS A MODEL)*". University of Human Development, Second International Conference on Computing, and Information Technology **2015**.

2. "*The Co-Existence of IMT-Advanced and Fixed Satellite Service Networks in the 3400-3600 MHz*". Proceeding of MCMC colloquium **2008**.

Refrences

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