



Experience

- **Postdoctoral Researcher** | 19 Mar. 2023– Present
CEMSE, King Abdullah University of Science and Technology, Saudi Arabia.
- **Visiting Scholar (remote)** | (1 Feb. 2022 – 31 Jan. 2023) & (1 Dec. 2024- 30 Nov. 2025)
Department of Electrical Engineering, University of Technology Sydney, Australia
- **Postdoctoral Researcher** | 1 Jul. 2021 – 31 Dec. 2022
Department of Engineering, University of Luxembourg, Luxembourg.
- **Research Associate** | 1 Nov. 2020 – 14 Jun. 2021
Center of Excellence for Innovative Projects, Jordan University of Science and Technology, Jordan.
 - Design advanced electronic systems, including a biomedical ventilator.
 - Supervise undergraduate students.
- **Casual Academic (Tutor)** | 25 Mar. 2017 – 4 Apr. 2019
Faculty of Engineering and Information Technology, University of Technology Sydney, Australia.
 - Assist students in developing a better understanding of AC and DC electrical circuit concepts.
 - Tutoring and teaching an introduction to electrical engineering subject.
 - Develop student skills in the use of various devices needed in the lab experiments.
 - Help students learn COMSOL Multiphysics® and prepare their engineering projects.
- **Research Assistant** | 18 Oct. 2017 – 20 Dec. 2017
Faculty of Engineering and Information Technology, University of Technology Sydney (UTS), Australia.
- **Embedded Systems Design Engineer** | 6 Sept. 2015 – 8 Oct. 2016
King Abdullah Design and Development Bureau (KADDB), Jordan.
 - Design practical applications using wireless communications and embedded systems.
 - Design wireless smart systems.
 - Participating in international conferences and exhibitions.
- **Research Assistant (RA)** | (1 May - 31 Aug 2014) – (3 May – 15 Jul. 2015)
Department of Network Engineering and Security, Jordan University of Science and Technology, Jordan.
 - Project 1: "Optimization of RF Propagation Pathloss Models for Mobile Communications in Jordan using Particle Swarm Optimization (PSO) and Genetic Algorithms (GA)".
 - Project 2: "Automatic Multilevel Thresholding Methods for Image Segmentation using Memetic Algorithm and Wavelet Transform".
- **Electronic Circuit Design & Programming Engineer** | 14 Sep. 2010 – 1 Apr. 2014
Electrical & Computer Engineering (ECE) Company, Jordan.
 - Design many innovative hardware and software projects in areas of wireless telecommunication, electronics, computer, and biomedical engineering.
 - Using various technologies and electronic components such as microcontrollers and sensors.
- **Microcontroller Programming Tutor** | 2011 – 2013
Many organizations and universities, Jordan.
 - Teaching theoretical and practical aspects of microcontrollers with practical applications.
 - Help students and trainees to interact and to be familiar with the microcontrollers.

Coding Skills

C++, Python, Tkinter, MATLAB, MATLAB App Designer, Machine learning, Microcontroller Programming, HMI, GUI, Web Design (WordPress®).

Software's Experience

GNU Radio, OAI 4G/5G, Open-RAN, srsRAN, STM32CubeIDE, STM32CubeMX, Test Mobile System (TEMS), MATLAB, Mathematica, Altium, EasyEDA, Microchip, Proteus, Multisim, Mikroc, PyCharm, COMSOL, Ansys Fluent, Microsoft Office, Operating systems (Windows, Linux).

Technology Experience

- Wireless Communication (5G, 6G, etc)
- Software-Defined Radio (SDR)
- Interface and Communication Protocols
- Programming & Design of Microcontroller Systems
- Digital & Analog Sensors
- PCB Design

Languages

English, Arabic

Qualifications

- **PhD Engineering | 13 Oct. 2016 – 29 Aug. 2020**
University of Technology Sydney, Australia ~ 2020
- **M.Sc. Electrical Engineering/ Wireless Communications | 28 Aug. 2011 – 30 March 2014**
Jordan University of Science & Technology, Jordan ~ 2014
Rank: First in the class & 1st Class Honours
GPA: 93.2 out of 100 (Excellent)
- **B.Sc. Electrical Engineering/ Communication and Software Engineering | 15 Sep. 2005 – 06 Apr. 2010**
Al-Balqa Applied University, Jordan ~ 2010
Rank: First in the class & 1st Class Honours
GPA: 3.92 out of 4 (Excellent)

Research Interests

Wireless communication, 5G SDR open-RAN testbed, TN-NTN 5G/6G coexistence, radio wave propagation, Internet of Things (IoT), nano-scale molecular communication, embedded systems, and machine learning.

Memberships

1. Jordan Engineering Association.
2. IEEE Young Professionals.
3. International Association of Engineers.
4. International Association of Learning Factories.

Honors, Awards, and Scholarships

- **KAUST Small Translational Research Grants (sTRG2025):** King Abdullah University of Science and Technology, Saudi Arabia, 2025. **PI:** Prof. Mohamed-Slim Alouini, **Researchers:** Hussein Al-Shatri & Muneer Al-ZuBi.
- **UTS President's Scholarship (Value ~ 100,000 A\$):** Provided by UTS to international Higher Degree Research students who demonstrate exceptional research potential to assist with PhD students' general living costs, University of Technology Sydney (UTS), Australia, 2016.
- **International Research Scholarships (Value ~ 125,000 A\$):** Provided by UTS to highly ranked research students who demonstrate outstanding academic achievement and research potential to cover Full PhD Tuition fees, University of Technology Sydney (UTS), Australia, 2016.
- **Ranked First in the class with 1st Class Honors in M.Sc Degree:** Jordan University of Science & Technology, Jordan, 2014.
- **Ranked First in the class with 1st Class Honors in B.Sc Degree:** Al-Balqa Applied University, Jordan, 2010.
- **Full scholarship (Living Costs & Tuition Fee):** Provided to support outstanding graduate students for pursuing MS.c degree, Scientific Research Support Fund (SRSF), Jordan, 2011.
- **Winner of third prize in digital poster presentation:** Research Showcase, Faculty of Engineering and IT, University of Technology Sydney (UTS), Australia, 2018.
- **First position in the III Creativity Forum:** Jordan Engineers Association (JEA), Jordan, 2010.

Training Courses

- Tutoring Skills Training Course, University of Technology Sydney (UTS), Sydney, Australia ~ (Oct. 2017).
- Training Course in MATLAB Programming, Al-Balqa Applied University, Irbid, Jordan ~ (10-24 Jun., 2007).
- Training Course in Computer Maintenance, Al-Majed Center for Communication and Computer Services, Irbid, Jordan ~ (20. May – 20 Jul., 2004).
- Training Internship, Irbid District Electricity Company, Irbid, Jordan ~ (24 Aug. 31 Dec., 2009).

Keynote Speaker, Presenter, and Trainer

- **Keynote Speaker**, Waves into Tomorrow, Department of Electrical Engineering, Jordan University of Science and Technology, Jordan, 10-Apr. 2018. Title: *“Nanoscale Molecular Communications”*.
- **Keynote Speaker**, Hijjawi Faculty for Engineering Technology, Yarmouk University, Jordan, 2012. Title: *“Programming of Microcontrollers”*.
- **Keynote Speaker**, DIH ON TOUR, Luxinnovation & Luxembourg Digital Innovation Hub, Luxembourg, 12-16 Nov. 2021. Title: *“The impact of digitalisation, artificial intelligence and industry 4.0 on industrial workers”*.
- **Trainer**, King Abdullah II Fund for Development (KAFD), Jordan University of Science and Technology, Jordan, 26 Jul. – 18 Aug. 2015. Title: *“MATLAB in Communication Engineering”*.
- **Presenter**, International Conference on Information & Communication Systems, Jordan, Jordan University of Science and Technology, Jordan, April 1-3, 2014.
Title 1: *“Performance Analysis of Mobile WiMAX Communication using Directional Antenna over Fading Channel”*.
Title 2: *“Modeling and Design of an Infrared-based Identification (IRID) System-Tag and Reader Design”*.
- **Presenter**, Jordan International Electrical and Electronics Engineering Conference (JIEEEEC), Jordan, Oct 12-14, 2015.
Title: *“Performance Analysis of MIMO System under α - μ Fading Channel for Full Scheduling Scheme”*.
Title: *“Wideband RF Power Meter with Frequency Range up to 10 GHz”*.
- **Presenter**, IEEE Vehicular Technology Conference (VTC), Norway, 2025.
Title 1: *“Experimental Outdoor Performance Evaluation of TVWS Narrowband Data Communication using SDR Platform”*
Title 2: *“Performance Analysis of TVWS-based Wireless Broadband Technology in a Sub-Urban Area”*
Title 3: *“Universal Scanning GUI Tool for Available and Usable TV White Space (TVWS) Spectrum”*
- **Presenter**, The IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications, Germany, 2022.
Title: *“Segmentation of Drilled Holes in Textured Wood Panels using Deep Learning Framework”*.
- **Presenter**, Research Showcase, Faculty of Engineering and IT, University of Technology Sydney (UTS), Australia, 2018.

Practical Projects (Hardware + Software)

- | | |
|---|---|
| <ul style="list-style-type: none">• Infrared Identification System (Tag and Reader)• Biomedical Mechanical Ventilator• GUI for Automated Assembly System• Multipurpose Robot• Security using Voice Recognition• Car Control using Voice Recognition• Wireless TV Oscilloscope• Speed Monitoring System• IR Wireless Microphone• Voice Transmission using Laser• Switching Mode Power supply• Bluetooth based Wireless Speaker• Bluetooth based Door Control• IR Short Range Radar on Servo Motor• Ultrasonic Radar• GSM Security System via SMS• DTMF Control System• Mobile (GSM/DCT) Jamming System• RF Text Communicator• Smart Garage Door Opener• Kids Monitoring System• RF detector & RSSI Meter• Voice Transmission via Optical Fiber• GPS based Tracking System | <ul style="list-style-type: none">• Stepper Motor Controller via PC• RFID based Collision Avoidance• Ultrasonic based Collision Avoidance• GSM based Fire Alarm System• Smart Parking System using PC & LCD• Wireless Water Level Monitoring System• GSM based Motion Detector System• Multipurpose Electronic Voting system• Baby Care room based on RFID system• Traffic light monitoring• Multiple frequencies jammer• Wireless weather station based on GSM• Automatic Shopping basket based on RFID• Wireless intercom system• Security system using wireless camera and vibration• Library books RFID scanner• Shooting Game based on FPGA Verilog Language• Blind Hat for Guidance• Electronic Voting System (Magnetic cards)• Automatic Light intensity Controller• Wireless Fire & Smoke Detector• Advance Digital Multimeter |
|---|---|

Book:

- **Muneer M. Al-Zu'bi**, "Smart Microcontrollers", Dar-Altatbeekeya Publishing and Distribution, Jordan, 2nd edition, 2010.

Papers :

- **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "End-to-End Modelling and Simulation of NLOS Sub-6 GHz Backhaul via Diffraction for Internet Connectivity of Rural Areas", IEEE Open Journal of the Communications Society, 2023.
- **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "Influence of Digital Terrain Data Accuracy on Diffraction Prediction in NLOS Wireless Backhauls", IEEE Transactions on Vehicular Technology, 2023.
- Ferdaous Tarhouni, **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "Machine Learning-based Path Loss Prediction in Suburban Environment in the Sub-6 GHz Band", IEEE Transactions on Vehicular Technology, 2025.
- **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "Macroscale Molecular Communication in IoT-based Pipeline Inspection and Monitoring Applications: Preliminary Experiment and Mathematical Model", IEEE Open Journal of the Communications Society, 2025.
- **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "Universal Scanning GUI Tool for Available and Usable TV White Space (TVWS) Spectrum", IEEE Vehicular Technology Conference (VTC), 2025.
- **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "Experimental Outdoor Performance Evaluation of TVWS Narrowband Data Communication using SDR Platform", IEEE Vehicular Technology Conference (VTC), 2025.
- Fahad Alqurashi, **Muneer M. Al-Zu'bi** and Mohamed-Slim Alouini, "Performance Analysis of TVWS-based Wireless Broadband Technology in a Sub-Urban Area", IEEE Vehicular Technology Conference (VTC), 2025.
- **Muneer M. Al-Zu'bi**, Mamoun F. Al-Mistarihi, "Performance Analysis of MIMO System under α - μ Fading Channel for Full Scheduling Scheme", JIEEC 2015, Jordan, Oct 12-14, 2015.
- **Muneer M. Al-Zu'bi**, Peter Plapper, "Segmentation of Drilled Holes in Textured Wood Panels using Deep Learning Framework", The IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (CIVEMSA 2022), Chemnitz, Germany, 2022.
- **Muneer M. Al-Zu'bi**, Mamoun F. Al-Mistarihi, and Mahmoud A. Khodeir "Performance Analysis of Mobile WiMAX Communication using Directional Antenna over Fading channel," ICICS, Jordan University of Science and Technology, Irbid, Jordan, April 1-3, 2014.
- **Muneer M. Al-Zu'bi**, Mahmoud A. Khodeir, and Mamoun F. Al-Mistarihi, "Modeling and Design of an Infrared-based Identification (IRID) System-Tag and Reader Design," Proc. IEEE 5th International Conference on Information and Communication Systems, ICICS 2014, Jordan University of Science and Technology, Irbid, Jordan, April 1-3, 2014.
- M. S. Al Salameh, **Muneer M. Al-Zu'bi**, "Suitable Propagation Loss Models for Mobile Communications in Jordan", International Conference on Network Technologies and Communication Systems (ICNTCS'2014), Tunisia, 2014.
- Mohammed S. Al Salameh and **Muneer M. Al-Zu'bi**, "Prediction of radio wave propagation for wireless cellular networks in Jordan," KST, Chonburi, Jan 28-31, 2015.
- **Muneer M. Al-Zu'bi**, "Wideband RF Power Meter with Frequency Range up to 10 GHz", JIEEC 2015, Jordan, Oct 12-14, 2015.
- Omar Banimelhem, **Muneer M. Al-Zu'bi**, and Mohammad AlSalameh, "Hata Path Loss Model Tuning for Cellular Network in Irbid City", CIT, Liverpool, UK, Oct. 26-28, 2015.
- Mohammed S. Al Salameh and **Muneer M. Al-Zu'bi**, "Swarm Intelligence Optimization of Lee Radio-wave Propagation Model for GSM Networks in Irbid", CSSCC, Vienna, Austria, March 15-17, 2015.
- Mohammed S. Al Salameh and **Muneer M. Al-Zu'bi**, "Measurements and path loss models for cellular communications in Jordan," International Journal of Networking and Communication, 2014.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, et al. "Intra-Body Molecular Communication via Blood-Tissue Barrier for Internet of Bio-Nano Things", IEEE Internet of Things Journal, 2022.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, "Modelling a Composite Molecular Communication Channel", IEEE Transactions on Communications, vol. 66, no. 8, 2018.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, "Implantable Biosensor Interface Platform for Monitoring of Atherosclerosis", IEEE Sensors Letters, 2020.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, "Modelling of Combination Therapy using Implantable Anticancer Drug Delivery with Thermal Ablation in Solid Tumor", Scientific Reports - Nature, vol. 10, 2020.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, "Modelling of Implantable Drug Delivery System in Tumor Microenvironment using Molecular Communication Paradigm", IEEE Access, vol. 7, 2019.

- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, "Modeling of Ligand-Receptor Protein Interaction in Biodegradable Spherical Bounded Biological Micro-Environments", **IEEE Access**, vol. 6, no. 99, 2018.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, Steve Ling, "Influence of Tissue Anisotropy on Molecular Communication", 41st IEEE International Engineering in Medicine and Biology Conference, Berlin, Germany, 2019.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, "Modelling of Multilayer Biological Medium under Molecular Communication Paradigm", IEEE Life Sciences Conference (LSC), Sydney, Australia, 2017.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, Steve Ling, "Comparison of Reception Mechanisms for Molecular Communication via Diffusion", 9th International Conference on Information & Communication Systems, Jordan, 2018.
- **Muneer M. Al-Zu'bi**, Ananda S. Mohan, Steve Ling, "Impact of Reactive Obstacle on Molecular Communication between Nanomachines", 40th IEEE International Engineering in Medicine and Biology Conference, USA, 2018.

References

- Prof. Mohamed-Slim Alouini, Al-Khwarizmi Distinguished Prof., Electrical and Computer Engineering, King Abdullah University of Science and Technology (KAUST), Kingdom of Saudi Arabia.
Email: slim.alouini@kaust.edu.sa
- Prof. Steve Ling, Associate Professor, School of Electrical, Mechanical and Biomedical Engineering, University of Technology Sydney, Sydney, Australia.
Email: steve.Ling@uts.edu.au
- Prof. Mamoun F. Al-Mistarihi, Electrical Engineering, Jordan University of Science & Technology (JUST), Jordan.
Email: mistarihi@just.edu.jo
- Dr. Emad Al-Momani, Assistant Professor, Industrial Engineering Department, Al Hussein Technical University (HTU), Jordan.
Email: emad.almomani@htu.edu.jo