Samer Alabed

Professor of Electrical and Biomedical Engineering at German Jordanian University, Jordan
Director of Accreditation and Quality Assurance

Phone: **+962 64294444 Ext: 4408, 4091**
Mobile: +962 796961771
Address: Amman, Jordan
Emails: **samer.alabed@gju.edu.jo**
salabed@nt.tu-darmstadt.de

PERSONAL INFORMATION

Address	Amman, Jordan
Telephone	+962 796961771 or +962 64294444 Ext: 4408
Nationality	German and Jordanian
Birthday	18.08.1981
Web Pages	@GJU @AQAD @MyPage @Scopus @Linkedin @facebook @Google

EDUCATION

2008 – 2012   Ph.D. degree (Dr. Ing) in Electrical Engineering and Information Technology / Digital Signal Processing with great honor "magna cum laude - GPA: Sehr Gut – 1.0", Darmstadt University of Technology, Darmstadt- City of Science, Germany.

2003 – 2005   M.Sc degree in Electrical Engineering / Digital Signal Processing with highest honors (GPA: 3.88/4), University of Jordan, Jordan.

ACADEMIC APPOINTMENTS

2023-present   **Professor of Electrical and Biomedical Engineering at the German Jordanian University**
Director of Accreditation and Quality Assurance Center
Director of E-Learning and Academic Performance Improvement Center
At the German Jordanian University (GJU), I have directly involved and led the following:

- ISO 9001 and ISO 21001 (Obtained in August 2024).
- Local and international accreditations such as National Qualification Framework (NQF) and German Accreditation.
- World university ranking such as QS ranking, THE ranking, SCImago ranking, Green Metric, and Times Impact.
- University action and strategic plan, risk management, and quality of the programs.
- Ensuring alignment of faculties, departments, and administrative units with the university's vision, mission, and objectives.
- Promoting and reinforcing a quality culture among all employees (academic and administrative) at the university.
- Reviewing quality standards for higher education institutions at national, and global levels.

- Continuous improvement of academic programs to stay current with changes in education.
- Commitment to support continuous e-learning and fostering intellectual growth and sustainable development.
- Monitoring and increasing the capacity of academic programs in line with strategic plans.
- Conducting self-evaluations of faculties, providing reports on strengths and weaknesses.
- Organizing training courses for academic and staff throughout the academic year.
- Developing plans for improvement and ongoing processes for growth.
- Occupying advanced places in the local and international rankings.
- Providing support for academic and administrative units to obtain local and international accreditations.
- Establishing a database for necessary information for accreditations and classifications.
- Achieving accreditation and classification criteria at local and international levels in collaboration with colleges and academic departments.
- Ensuring compliance with the National Qualifications Framework and preparing its necessary documents and plans to be used by all GJU programs.
- Focusing on self-assessment & continuous development to meet standards of quality assurance.
- Preparing standards and procedures for quality assessment programs.
- Developing a comprehensive system for quality assurance management at the university.
- Offering advice and assistance on quality assurance issues.
- Managing the flow of information related to quality assurance standards and procedures.
- Ensuring the implementation of recommendations from planning and evaluation studies.
- Modifying all study plans to align with national and international accreditations.
- Serving as a member of tens of committees at the university level.
- Serving as a head of the integrity committee on the university level.
- Serving as a head of the Public Safety and Risk Management Committee on the university level.

2022-2023   **Associate Professor, Department Chair of Biomedical Engineering at the Germany Jordanian University, Jordan.**

2022-2023   **Associate Professor, Exchange Coordinator of Biomedical Engineering at the Germany Jordanian University, Jordan.**
At the German Jordanian University, I have directly involved in the following:

- Preparing a new study plan. During 2022-2023, the study plan of biomedical engineering is totally modified where the prepared study plan is approved by the department council, study-plan committee, school council, and deans' council.

- [Establishing two tracks in biomedical engineering for the first time](#). The first track in the field of biomedical electronics and signal processing and the second one in the field of bionic and biomechanical engineering. The established tracks are approved by the department council, study-plan committee, school council, and deans' council.
- Establishing a dual study program in biomedical engineering for the first time. The established program is approved by the department council, study-plan committee, school council, and deans' council.
- Preparing a [nursing study plan](#) for the first time after cooperation with tens of professors from local and international universities. The study plan of nursing is prepared and approved by the study-plan committee, deans' council, and the Jordan higher education accreditation commission.
- [Establishing a nursing department and nursing school](#) at the GJU for the first time which is approved by the Jordan higher education accreditation commission.
- [Signing tens of MoUs](#) with national and international organizations and universities for research, employment and teaching purposes.
- Serving as quality assurance liaison officer for the school of applied sciences.
- Faculty recruitment and development, faculty evaluation, program development, program review, student advisement, departmental budgeting and budget control, class schedule planning, and general supervision of the teaching, research, and service and related scholarly activities of the department.
- Teaching, preparing, and modifying courses as well as supervise graduation projects
- Serving as a head for several committees at the college level such as curriculum development committee, quality assurance committee, and GP committee.
- Serving as a head for several committees at the department level such as study-plan committee, research committee and curriculum development committee.
- Serving as a member for several committees at the university level such as curriculum and program development committee and quality assurance committee.
- Serving as a member for school council.
- Serving as a member for several school and department committee.
- Serving as an exchange coordinator for biomedical engineering students studying in Germany.

2019 – 2022   **Associate Professor of Electrical Engineering / Signal Processing Track, American University of the Middle East, Kuwait.**

2015 – 2019   **Assistant Professor of Electrical Engineering / Signal Processing Track, American University of the Middle East, Kuwait.**

At the American University of the Middle East (from 2015-2022), I have directly involved in:

- Teaching /preparing/proposing graduate and undergraduate courses in electrical engineering / Signal processing track.
- Supervising undergraduate projects in all fields of electrical engineering (EE) / signal processing
- Serving as an ABET coordinator for EE department.
- Serving as a coordinator of the research committee.
- Serving as a coordinator for curriculum development committee.
- Serving as a coordinator for lab committee.
- Serving as a coordinator for many EE courses
- Serving as a coordinator for graduation project committee.
- Serving as a member in the exam committee.
- Serving as a coordinator for academic activities.
- Serving as a member in many clubs such as robotic, nanotechnology, space... etc.

2008 – 2015 **Junior Professor, Postdoctoral Researcher, Teaching Assistant, Research Assistant, Darmstadt University of Technology (TU-Darmstadt), Darmstadt, Germany.**
At the Darmstadt University of Technology (from 2008-2015), I have directly involved in:
- Lecturer and project supervisor of graduate courses in several fields related to digital signal processing such as speech, audio, and image processing, smart antennas, smart IOT health care systems using wireless sensor networks and other related fields.
- Teaching and supervising PhD, MSc, and BSc students in the fields of signal processing and other related fields.
- Developing & proposing advanced and novel digital signal processing algorithms under projects supported by the *LOEWE Priority Program, Cocoon, the European Research Council (ERC), German Research Foundation (DFG), the German Academic Exchange Service (DAAD), Alexander von Humboldt Foundation, Konrad Adenauer Foundation* and many other companies and institutes.
- Developing advanced digital and statistical signal processing codes, prototypes, and algorithms to be used in several systems and application. The work was with the company called mimoOn GmbH, Duisburg (http://www.mimoon.de) and for commercial purposes.
- Developing advanced signal processing algorithms under a project supported by TU-Darmstadt
- and Fraunhofer Institute.
- Many researches with graduate students and research assistants in areas related to signal processing including speech, audio, & image processing, smart antennas, smart IOT health care systems using wireless sensor networks, and other related fields.
- Supervising several PhD students, tens of master theses, and hundreds of Bachelor projects.

2003-2008 **Teaching Assistant, Research Assistant, Lecturer, University of Jordan, Amman, Jordan.**
- Teaching and supervising electrical and computer engineering labs and courses.
- Developing & proposing advanced and new algorithms in the fields of biomedical signal processing.

2006-2008 **Lecturer, Wadi Al-Sir international college (UNRWA, United Nations), Amman, Jordan.**
- Lecturer and project supervisor of undergraduate courses in the fields of electrical and computer engineering.
- Developing advanced algorithms in the fields of signal processing.

TEACHING EXPERIENCE

My objective as a teacher is to motivate my students to develop their own learning interests and critical thinking, establishing a learner- centered environment in the classroom. In particular, teaching a wide range of courses for bachelor and master students - from first year to advanced courses in almost all fields related to signal processing, wireless communications as well as electrical engineering and information technology- during my graduate career at several universities has made me aware of the needs and interests of a culturally diverse student body. In the last 20 years, I have designed and taught the following courses, Labs, and tutorials for both undergraduate and graduate levels in signal processing, wireless communications as well as electrical engineering and information technology:

Signals and systems with its Lab	Medical signal processing
Medical Telemetry	Digital electronics
Digital signal processing with its Lab	Communication System I and 2 with their Labs
Biomedical electronics	Wireless Communication Systems
Antenna signal processing	Speech and Image Processing
Electrical Circuit 1 with its lab	Electrical Circuit 2 with its lab
Electronics 1 with its lab	Electronics 2 with its lab
Probability and Statistics	Digital systems and its Lab
Differential Equations	Applied Mathematics for Engineers
Filter Design	Numerical Methods for Engineers
MIMO systems	Microprocessor and Embedded Systems with its Lab
Optics	Modern Control systems
Electromagnetics 1-2	Biomedical Sensors and Transducers
Digital Control systems	Data Security for Health Information Systems
Linear Algebra	Graduation Project 1 and 2
Digital Electronics	Bioinformatics
Machine Learning for Signal Processing	Microcontrollers
Cryptography	Electrical Machines
Engineering Economy	Advanced DSP Algorithms for Smart Antenna Systems
Instrumentations 1 and 2	Optical communications
Radar systems	Assembly Language (Theory and Lab)
Project Seminar in smart IOT systems	C Language (Theory and Lab)
C++ Language (Theory and Lab)	Quick and Turbo Basic (Theory and Lab)
MATLAB	Introduction to security
Smart Health care systems	MATLAB and Simulink for Signal Processing

Note that I have served as a director of the e-learning and academic performance improvement center from 01/09/2023 to 31/8/2024 where I was responsible for improving the academic performance for the whole university where at the German Jordanian University, I have directly involved in the following:
- Commitment to support continuous e-learning and fostering intellectual growth and sustainable development.
- Quality of the programs.
- Conducting training courses
- Developing E-learning through videos
- Checking all online, blended and face-to-face courses to be fit with the local accreditation.
- Doing everything needed to improve the academic performance

INDUSTRIAL EXPERIENCE

Regarding Industrial expertise, I have worked and cooperated with several industrial companies such as Siemens, MIMOON, Fraunhofer – Institutes, Intel, and several universities and organizations during my Ph.D and postdoctoral studies as follows:

- Developing advanced digital and statistical signal processing codes, prototypes, and algorithms to be used in wireless communication systems and application. The work was with the company called MimoOn GmbH, Duisburg (http://www.mimoon.de) and for commercial purposes.
- Developing advanced signal processing algorithms to be used in the medical hearing aids under a project supported by TU-Darmstadt and several companies for commercial purposes.
- Several researches with graduate students and research assistants in areas related to signal processing including speech, audio, & image processing, smart antennas, smart IOT health care systems using wireless sensor networks, and other related fields.
- In 2023, I secured a [funding of approximately $21,000 from Aeon Medical Supplies LLC](#) to design an IoT-based medical device.

RESEARCH HIGLIGHTS

➢ I was classified during the years from 2019 to 2021 among the top 2% of the influential scientists in the field of digital signal processing in the world in the study (classification) conducted by scientists from the prestigious Stanford University and is known in the academic community as the "***Stanford classification***". The report is based on several factors, the most important of which are the strength of international scientific publishing, the number of scientific citations for research, and participation in reviewing and editing scientific research in reputable journals. The third report was published in October 19, 2021 as shown in the following link: https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/2

➢ I was classified among the best researchers according to the AD Scientific Index since it was established in 2021 by Prof. Dr. Murat ALPER as shown in the following link: https://www.adscientificindex.com/scientist/samer-alabed/453930.

➢ I am an IEEE senior member and served as the head of the research committee as well as the head of one research group, i.e., the Signal Processing group. I have obtained several awards and funds from IEE, IEEE, DAAD, DFG, ERC such as the best paper award from IEEE WSA. My researches have been supported by several grants and funds from EU and German companies and research organization such as ***LOEWE Priority Program Cocoon, the European Research Council (ERC), German Research Foundation (DFG), the German Academic Exchange Service (DAAD), Alexander von Humboldt Foundation, Konrad Adenauer Foundation, State of Hesse, TU-Darmstadt, and European Union (EU).*** Moreover, I organized and was invited to many conferences and workshops. Now I reached to 50 papers published in prestigious International Q1/Q2 Scopus-indexed Journals & conference.

Research interests:
- Wireless sensors and relay networks
- Digital Signal processing including RF/speech/audio/image signal processing
- Signal Processing for wireless communication systems.
- Multi-antenna signal processing
- Smart IOT systems
- Mathematics, optimization methods, and software development.

ESTABLISHMENT OF LABS

During the period from 2015 to 2022, I have served as a head of the lab committee to
- Establish, improve & maintain EE Labs
- Prepare and modify lab manuals and lab forms
- Follow up the problems, issues, modifications and suggestions available in the improvement forms
- Follow up required software, items and components available in the inventory forms
- Prepare and follow up requisition forms

Therefore, at the American university of the middle east, I established the following labs:

Micro Electrical Circuits lab	Micro Electronics Design Lab
Mixed Signal & Data Processing Lab	Optics lab
Electronics Lab	Digital Signal Processing Lab
Communication Systems Lab	IOT Lab
Electric Power and Machines Lab	

CURRICULUM DEVELOPMENT

I have established the following colleges, Departments, and tracks during the last 10 years:

B.Sc. in Biomedical Engineering / Instrumentation Engineering Track	B.Sc. in Biomedical Engineering / Bionic and biomechanical Engineering Track
B.Sc. in Biomedical Engineering / Smart healthcare systems Track	B.Sc. in Biomedical Engineering / Dual study program
B.Sc. in Electrical Engineering / Signal Processing Track	B.Sc. in Electrical Engineering / Biomedical Engineering Track
B.Sc. in Electrical Engineering / Telecommunication Track	M.Sc. in Electrical Engineering and Information Technology
B.Sc. in Nursing	College of Nursing

ACCREDITATION ACHIEVEMENT

I have served as head of the accreditation and quality assurance department. I participated in preparing and reviewing the whole material required for the accreditation and quality assurance and leading the effort to pursue and maintain Local and international accreditation including

- The development of assessment plans, conducting robust and innovative research, departmental structuring, plan implementations
- Coordinating the logistics of accreditations
- Supervising all assessment committees and focus group committees
- Preparing student outcome assessment matrix, assessment instruments and performance indicators, course syllabi, evaluation & continuous improvements, course mapping, and instructor grading sheets
- Leading the GJU team to get the National Qualification Framework for biomedical engineering.

Note that I have received ***Appreciation Certificate*** from the American University of the Middle East due to my hard work and dedication efforts for my contributions. After coordinating the ABET accreditation for the department of electrical engineering and information technology, we achieved, for the first time, a 6-year full accreditation for the department. I am currently working as a head of accreditation and quality assurance center at the German Jordanian University leading the effort to pursue and maintain Local and international accreditations.

I have also received ***Appreciation Certificate*** in 2023 from the president of the German Jordanian University (GJU) due to my hard work and dedication efforts in establishing the school of nursing at GJU.

ACADEMIC ADMINISTRATIVE APPOINTMENTS

Director of Accreditation and Quality assurance Center, German Jordanian University, Jordan
- See the responsibilities in .

Director of E-Learning and Academic Performance Improvement Center, German Jordanian University, Jordan
- See the responsibilities in .

Head of Biomedical Engineering Department, German Jordanian University, Jordan
- See the responsibilities in .

Exchange Coordinator for the German year, German Jordanian University, Jordan
- See the responsibilities in .

ABET Coordinator for EE department, American University of the Middle East, Kuwait.

Main responsibilities and achievements:
- Oversaw the ABET accreditation for the department of electrical engineering.
- Achieved a 6-year full accreditation for the department.
- I am currently working with the college for the re-accreditation of electrical engineering from ABET.

Note that I have received *Appreciation Certificate* from AUM due to my hard work and dedication efforts for my contribution at AUM.

Coordinator of the Curriculum Development Committee

Since I am the head of the signal processing track at the EE department, I was responsible for curriculum development committee in electrical engineering department where I participated in preparing, proposing, improving, and reviewing the EE curriculum, EE tracks (especially the signal processing tracks), syllabi, guidance plans, course folders, course projects, course material, as well as proposing new EE tracks such as Biomedical signal processing, machine learning, and IOT. Moreover, I have prepared all courses in the signal processing track from scratch.

Coordinator of the Lab Committee

I was responsible for all labs in electrical engineering department where I participated in establishing EE labs from scratch as well as continuously improving, and reviewing their curriculum, equipment, lab manuals and materials, software, syllabi, guidance plans, course folders, course projects, … etc.

Coordinator for Signal Processing Track (SPT)

From 2015 to 2022, I am the coordinator of the signal-processing track. I have served as a coordinator for all course related to SPT including signals and systems, digital signal processing with its applications, communication system I & 2 with their Labs, control & feedback systems, electrical circuit 1 with its lab, electrical circuit 2 with its lab, electronics 1 & 2, digital electronics, electromagnetics 1 & 2, probability and statistics and many others.

Coordinator of the research committee

I served as a coordinator for the research committee in order to improve the research output of the EE department and improve the overall rank of the university.

Coordinator of the graduation project committee

I served as a coordinator for the graduation project (GP) committee where I participated in proposing graduation projects, preparing GP folders, GP abstracts, GP activities, … etc.

Coordinator for academic activities

I served as a coordinator for academic activities where I participated in proposing and running academic activities during the academic semesters.

Coordinator for several focus groups

I served as a coordinator for several focus groups such as the signal processing focus group and electronics and circuits focus group in order to
- Check the issues, concerns, and problems in EE courses and labs and solve them.
- Improve the EE tracks
- Continuously improve the course scheduling, course folders, course material, and course projects
- Prepare and improve graduate and undergraduate curriculums
- Continuously improve the learning process.

Head of the quality assurance (QA) committee

I served a head of the quality assurance committee in order continuously improve the whole learning process as well as improve the rank of the whole university.

Serviced as a member in many clubs such as robotic club, nanotechnology club, space club … etc.
Supervision:

Supervising several PhD students, more than 40 Master Theses and hundreds of Bachelor projects.

AFFILIATIONS

- Editor, Scientific Reports, Nature (Responsible for handling peer review and editorial decisions)
- Senior Member, IEEE (Institute of Electrical and Electronics Engineers)
- Member, IEEE Signal Processing Society, IEEE Young Professionals, and IEEE Communications Society Membership.
- Member, JEA (Jordan Engineers Association)
- DAAD alumni
- Member of Reach4Health organization affiliated with the Sustainability Center at Columbia University in the United States, focusing on refugees in Turkey, Jordan, Syria, Lebanon, and Palestine - https://reach-health.com/about
- Member of the Accreditation and Quality Assurance Commission for the Higher Education Institutions to accredit the Engineering programs within the national qualification framework for all universities in the Hashemite Kingdom of Jordan.
- GJU Innovation Ambassador
- Quality Evaluator from the Accreditation and Quality Assurance Commission for the Higher Education Institutions

LANGUAGES

Arabic   Native language

English   Fluent (speaking, reading, and writing)

German   (C1 level) from Goethe Institute / Mannheim - Germany

TECHNICAL PROFICIENCY

Programming Languages and Software	Matlab/ Simulink, C-language, Basic language, C++ language, Assembly Language, Mathmatica, Maple, MathCAD, Workbench, Multi-SIM, Python, Arduino, and Labview.
Microcontrollers and FPGAs Platforms	Arduino, Raspberry Pi, PIC microcontroller, SDR, RTL-SDR, Hack RF, USRP (NI product).
Office	Windows Operating Systems (DOS, Windows 9X, 2000, Millennium, XP, Vista, 7, 8, 10), and Linux.
Drawing	
Web Design	Microsoft Office, Open Office, LaTex.
	Xfig, Dia, Inkscape, Matlab, and AutoCAD.

PROFESSIONAL CERTIFICATES

- Certified online and blended learning educator from GJU
- Certified innovation ambassador for GJU from the Global Innovation Management Institute (GIMI)
- Certification in ISO 31000: Risk Management in Quality Systems from Royal Scientific Society
- Quality Assurance Evaluator
- ISO 9001 Internal auditor
- CCNA Academy Certificate for Instructors
- Certificate in Interconnecting Cisco Networking Devices (CCNA)
- Certificate in Global System for Mobile (GSM)
- Certificate in Orientation for Cisco Academy
- Certificate in the Fundamentals of Wireless LANs
- Certificate in the Fundamentals of web development (HTML, FrontPage, ASP.net)
- Advanced ICDL certificates in (Microsoft Word, Microsoft Excel, and Microsoft PowerPoint).

AWARDS

- Appreciation Certificate in 2023 from the president of the German Jordanian University (GJU) due to my hard work and dedication efforts in establishing the school of nursing at GJU.
- Appreciation certificate from AUM due to my hard work and dedication efforts for my contributions in teaching /services / researches at AUM.
- Appreciation certificate from AUM due to my hard work and dedication efforts for my contributions in teaching /services / researches at AUM.
- Achievement certificate from supervising the best graduation project in biomedical signal processing AUM.
- Best paper award for our paper published in the 19th International IEEE/ITG Workshop on Smart Antennas (WSA 2015), Ilmenau, Germany, March 2015.
- Full doctoral research scholarship starting from 2008, DAAD (German Academic Exchange Service), Darmstadt, Germany.
- Full doctoral scholarship from several universities in Jordan.
- University of Jordan graduate assistantship from 2003 to 2005, Amman, Jordan.
- The best student award in my BSc and MSc study.
- The second place in IEEE competition in 2003 and granted an award due to the graduation project entitled as "*Sinusoidal Speech Source Coding*".
- The third place in IEEE/IEE competition in 2004 and granted an award due to the project entitled as "*Techniques in Speech Source Coding*".

RESEARCH GRANTS

I received the following grants and scholarships during the last 14 years

- Obtaining financial support of 35390 Jordanian Dinars (JOD) for scientific research from The Scientific Research and Innovation Support Fund in the Hashemite Kingdom of Jordan in 2024 to 2026.
- Financial support in 2024 from Ion Company: A memorandum of understanding was signed with them, obtaining financial support of 15000 JOD for scientific research to manufacture a medical device.
- Seed Research Grant with an amount of 42000$ from GJU in 2023.
- Obtaining a medical device as a donation from Arab Medical Laboratories Company worth 15,000 Jordanian Dinars.
- Preapproval for two funds from the Scientific Research Support Fund in the Hashemite Kingdom of Jordan by more than 150,000$.
- Full doctoral research scholarship in 2008-2010, *DAAD (German Academic Exchange Service)*, Darmstadt, Germany.
- Research Grant during 2010 to continue my PhD studies in the electrical engineering and information technology program at the Darmstadt university of technology from the *State of Hesse*.
- Research Grant in 2011 to continue my PhD studies in the electrical engineering and information technology program at the Darmstadt university of technology from *German Research Foundation (DFG)*.
- Research Grant in 2012 to continue my PhD studies in the electrical engineering and information technology program at the Darmstadt university of technology from *European Research Council (ERC)*.
- Post-doctoral scholarship in Darmstadt University of Technology, Germany, during the period from 2012 to 2013 under grant from *European Research Council (ERC).*
- Post-doctoral scholarship in the Darmstadt University of Technology, Germany, during the period from 2013 to 2014 under grant called Cognitive Radio Oriented Wireless Networks (CROWN) from *European Union (EU).*
- Post-doctoral scholarship from the Darmstadt University of Technology, Germany, during the period from 2014 to 2015.

- University of Jordan Graduate Assistantship from 2003 to 2005, Amman, Jordan.
- Doctoral Scholarship form several universities in Jordan (not used).
- Several Research Grants and Funds from the American University of the Middle East in Kuwait as I was a leader of a research group during 2015 to 2022.
- My PhD and research studies during 2008 to 2015 were supported by several grands such as
  - The Priority Program which was established officially on 1 January 2011 and is funded with an amount of 4.5 million euro for 3 years by the **State of Hesse**. The grant was secured within the frame of the third round of the research support program **LOEWE**- "Landes-Offensive zur Entwicklung Wissenschaftlich-ökonomischer Exzellenz".
  - The **European Research Council (ERC)** under Advanced Investigator Grant program
  - **German Research Foundation (DFG)** under Grant GE 1881/4-1.
  - Full scholarship from **German Academic Exchange Service (DAAD)**
  - **European Union (EU) Project** under Grant called Cognitive Radio Oriented Wireless Networks (**CROWN**).

(SELECTED) SUPERVISED MASTER THESES AND GPS

Note that there is no master program in my department at both GJU and AUM, however, I supervised many master theses as follows:
- Advanced Multi-Antenna Techniques for Multi-User Two Way Wireless Relay Networks
- Efficient techniques for multi-user two-way relay networks
- Computationally efficient VBLAST decoding technique in modern multi-antenna systems
- Advanced multi-antenna techniques for multicast and broadcast services in modern cellular networks
- Implementation of differential multi-antenna technique on a software defined radio platform
- Differential beamforming techniques for two-way relay networks using M-QAM and M-PSK constellations
- Advance Relay Selection Techniques for Two Way Relay Cellular Networks

I supervised tens of projects as follows:
- Smart Health Care System
- Medical Emergency notification system
- Smart IOT health care systems
- Detection of Diseases Based On Sound Signals
- Design and Implementation of Smart Wheelchair using Internet of Things
- Secure Medical Emergency Notification System
- Advanced Wearable Health Monitoring System
- Wireless sensor platform to measure heart rate and temperature
- Smart Computer Controlled Electric Wheelchair for Biomedical Applications
- Zigbee based Wearable Remote Healthcare Monitoring System for Elderly People
- Secure Medical Emergency Communication System
- LORA based Wearable Remote Healthcare Monitoring System for Elderly People
- Kids' Lives Matter: Monitoring Kids Temperature
- Accident Warning System
- Secure Medical Satellite Communication System
- Smart Wireless Safety System for Oil Refinery Facilities
- IOT health monitoring system
- An Internet of Things Healthcare Device
- ROBOAIDQ8 - Robot Aid

INSTITUTIONAL SERVICE ACTIVITIES

- Served as a [Director of Accreditation and Quality assurance Center](#)
- Served as a Director of E-Learning and Academic Performance Improvement Center
- Served as a Head of Biomedical Engineering Department at GJU, Jordan.
- Served as an exchange coordinator for the German year at GJU.
- Served as an organizer and track chair for several international conferences such as CAMUS workshop which is conducted four times in four universities (TU-Munich (2011), TU-Darmstadt (2012), TU-Illmenau, and TU-Berlin) during four years [2011-2014].
- Served as an organizer for IEEE SAM 2008 which is conducted in TU-Datmstadt.
- Served as an organizer and track chair for the 22nd REM 2024.
- Served as an organizer at the third international conference on biomedical engineering at the Damascus University - Damascus – Syria, between 28-30 April 2024.
- Served as an organizer for all CoCoon Conferences from 2011 to 2015, Darmstadt, Germany.
- IEEE/ISWCS, August, 2013, Ilmenau, Germany
- IEEE/ITG Workshop, 2013, Darmstadt, Germany.
- EUSIPCO, 2013, Morocco.
- Several IEEE conferences such as ICASSP, ISWCS, CAMSAP, SAM ... etc.

(SELECTED) EDITORIAL BOARD MEMBER & REVIEWER

Editor in Scientific Reports, Nature (Responsible for handling peer review and editorial decisions).
Reviewer in IEEE Transactions on Signal Processing, IEEE Transactions on Wireless Communications, IEEE Transactions on Communications, IEEE Signal Processing Letters, IEEE wireless communication Letters, EURASIP Journal on Wireless Communications and Networking, EURASIP Journal on Advances in Signal Processing, International IEEE/ITG Workshop on Smart Antennas (WSA), International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), IEEE Sensor Array and Multi-channel Signal Processing Workshop (SAM), Asilomar Conference on Signals, Systems, and Computers, European Signal Processing Conference (EUSIPCO), IEEE REM.

(SELECTED) COMMUNITY SERVICE ACTIVITIES

- Writing a part of the comprehensive exam for University Middle-Degree Diploma on the kingdom level
- Served as a member in REACH for Health organization to increase access to reliable heath information for all young people - https://reach-health.com/about
- Participating in signing MOUs with German Universities (HS-Folda, FH-Bielefeld), German organizations (GIZ), and German Hospitals (Bielefeld Hospitals) to establish nursing school
- Establishing nursing school to provide the community with professional nurses.
- Conducting several lectures, meetings, and workshops in international and national universities, schools, companies, and organizations.

JOURNAL PAPERS

The list of the following articles can be accessed through the following link:

- A. Alsaraira, **S. Alabed**, and O. Saraereh, Remote Medical Care Monitoring System, International Journal of Electrical and Computer Engineering, **2025.** [JCR: 2.407, CiteScore: 3.2; Q2].

- **S. Alabed**, M. Al-Rabayah, N. Mostafa, Z. AlArnaout, E. Hamad, I. Maaz, and Y. Kotb Differential Beamforming Using Rotman Lens for Wireless Sensor Networks, Elsevier ICT express, pp. 974-982, vol. 9, no. 5, **2023**. [Q1, IF: 4.8, CiteScore: 10.3, SNIP: 2.246].

- **S. Alabed**, A. Alsaraira, N. Mostafa, M. Al-Rabayah, A. Shdefat, C. Zaki, O. Saraereh, and Z. Al-Arnaout, Two-Way Differential Strategy for Wireless Sensor Networks, Bulletin of Electrical Engineering and Informatics, pp. 3499-3508, vol. 12, no. 6, **2023**. [Q2- CiteScore: 3.0, SNIP: 0.639, and SJR: 0.299].

- **S. Alabed**, I. Maaz, and M. Al-Rabayah, Improved Bi-directional Three-phase Single-Relay Selection Technique for Cooperative Wireless Communications, Computer, Material, & Continua, pp. 999-1015, vol. 70, no.1, **2022**. [IF: 3.9, CiteScore: 4.9 - Q1].

- Z. AlArnaout, N. Mostafa, **S. Alabed**, W. Aly, and A. Shdefat, RAPT: A Robust Attack Path Tracing Algorithm to Mitigate SYN-Flood DDoS Cyberattacks, Sensors, pp. 1-20, vol. 23, no. 1, **2023**, https://doi.org/10.3390/s23010102. [IF: 4.05, CiteScore: 5.8 - Q1].

- *S. Alabed*, A. Alsaraira, N. Mostafa, M. Al-Rabayah, Y. Kotb and O. Saraereh, "Implementing and Developing Secure Low-Cost Long-Range System Using Speech Signal Processing", Indonesian Journal of Electrical Engineering and Computer Science, pp. 1408–1419, vol. 31, no 3, *Oct. 2023*. [JCR: 2.407, CiteScore: 2.9, Q2].

- A. Alsaraira, **S. Alabed**, E. Hamad and O. Saraereh, "An optimal framework for alzheimer's disease diagnosis," Intelligent Automation & Soft Computing, vol. 37, no.1, pp. 165–177, **2023**. [IF: 3.4, CiteScore: 2.4 – Q2].

- A. Zreikat, and **S. Alabed**, "Performance Modeling and Analysis of LTE/Wi-Fi Coexistence", Electronics, pp. 1-19, vol. 11, no. 7, **May. 2022.** https://doi.org/10.3390/electronics11071035 [IF: 2.69, CiteScore: 4.7 – Q2].

- **S. Alabed**, N. Mostafa, W. Aly and M. Al-Rabayah, A low complexity distributed differential scheme based on orthogonal space time block coding for decode-and-forward wireless relay networks, International Journal of Electrical and Computer Engineering, pp. 1180-1188, vol. 13, no. 1, Feb. 2023, *Feb. 2023*. DOI: http://doi.org/10.11591/ijece.v13i1.pp1180-1188. [JCR: 2.407, CiteScore: 3.2; Q2].

- N. Mostafa, Y. Kotb, Z. AlArnaout, **S. Alabed**, and A. Shdefat, "*Replicating File Segments between Multi-Cloud Nodes in a Smart City: A Machine Learning Approach*", Sensors, pp. 1-30, vol. 23, no. 10, **May 2023**. [IF: 4.05, CiteScore: 5.8 - Q1]. https://www.mdpi.com/1424-8220/23/10/4639

- **S. Alabed**, M. Al-Rabayah and W. H. Aly, A Beamforming Technique Using Rotman Lens Antenna for Wireless Relay Networks, Computer, Material, & Continua, pp. 5641–5653, vol. 73, no. 3, *Jully 2022*. [IF: 3.9, CiteScore: 4.9 - Q1]. https://www.techscience.com/cmc/v73n3/49050/pdf

- **S. Alabed**, I. Maaz and M. Al-Rabayah, Improved two-way double-relay selection technique for cooperative wireless communications, pp. 1-24, vol. 2021, no. 57, EURASIP Journal on Wireless Communications and Networking, *March 2021*, doi.org/10.1186/s13638-020-01846-7. [SNIP: 1.03, JCR: 2.407, CiteScore: 7.6 – Q1].

- N. Mostafa, W. Aly, **S. Alabed**, and Z. Al-Arnaout, Intelligent Replica Selection in Edge and IoT Environments Using Artificial Neural Networks. Electronics, pp. 1-22, vol. 11, no. 16, **August 2022**, https://doi.org/10.3390/electronics11162531. [IF: 2.69, CiteScore: 4.7 – Q2].

- **S. Alabed**, I. Maaz, and M. Al-Rabayah, Two-phase bidirectional dual-relay selection strategy for wireless relay networks, Computer, Material, & Continua, pp. 539-553, vol. 69, no. 1, **March 2021**, doi: 10.32604/cmc.2021.018061. [IF: 3.9, CiteScore: 4.9 - Q1].

- E. Hamad, **S. Alabed**, A. Alsaraira, and O. Saraereh, Implementing and Developing Multi-Stage Cryptography Technique for Low-Cost Long-Range Communication System, Bulletin of Electrical Engineering and Informatics, pp. 264-276, vol. 13, no. 1, **2024**. [CiteScore: 3.0, SNIP: 0.639, and SJR: 0.299, Q2].

- A. Alsaraira, O. Saraereh, and **S. Alabed,** Advancements in Breast Cancer Detection through Broadband Microstrip Antenna Technology, Accepted in International Journal of Online and Biomedical Engineering, **2024.**

- **S. Alabed**, I. Mahariq, M. Slaman, and M. Kuzuoglu, A Novel Beamforming Emulating Photonic Nanojets for Wireless Relay Networks, Computer, Material, & Continua, pp. 575–58, vol. 69, no. 1, *March 2021*. [IF: 3.9, CiteScore: 4.9 - Q1]. https://www.techscience.com/cmc/v69n1/42785

- W. Aly, H. Kanj, **S. Alabed**, N. Mostafa, and K. Safi, Dynamic Feedback versus Varna-Based Techniques for SDN Controller Placement Problems. Electronics, pp. 1-17, vol. 11, no. 14, **August 2022**, https://doi.org/10.3390/electronics11142273. [IF: 2.69, CiteScore: 4.7 – Q2].

- **S. Alabed**, I. Maaz, and M. Al-Rabayah, Distributed differential beamforming and power allocation for cooperative communication networks, International Journal 0f Electrical and Computer Engineering, pp. 5923–5931, vol. 10, no. 6, *Dec. 2020*. [JCR: 2.407, CiteScore: 3.2; Q2].

- **S. Alabed**, Noncoherent distributed beamforming in decentralized two-way relay networks, IEEE Canadian Journal of Electrical and Computer Engineering, pp. 305–309, vol. 43, no. 4, *Dec. 2020*. [Q1 based on JCR, SciMago, Scopus].

- **S. Alabed**, A. Zreikat and M. Al-Abed, A computationally efficient non-coherent technique for wireless relay networks, Indonesian Journal of Electrical Engineering and Computer Science, pp. 869-877, vol. 26, no. 2, *May 2022*. [JCR: 2.407, CiteScore: 2.9, Q2].

- W. Aly, **S. Alabed**, H. Kanj, and N. Mostafa, Feedback ARMA models versus Bayesian models towards securing OpenFlow controllers for SDNs, Electronics, pp. 1-14, vol. 11, no. 9, *June 2022*, https://doi.org/10.3390/electronics11091513. [IF: 2.69, CiteScore: 4.7 – Q2].

- W. Aly, H. Kanj, N. Mostafa, and *S. Alabed*, Toward securing OpenFlow controllers for SDNs using ARMA models, WSEAS Transactions on Mathematics, pp. 21-29, vol. 4, *April 2022.* [Cite Score: 0.9].

- **S. Alabed**, A computationally efficient detector for MIMO systems, the International Journal of Electrical and Computer Engineering, pp. 4138- vol. 9, vol. 9, no. 5, part II, *October 2019*. [JCR: 2.407, CiteScore: 3.2; Q2]. http://www.iaescore.com/journals/index.php/IJECE/issue/view/536

- I. Maaz and **S. Alabed**, Efficient time reversal strategy for MISO-OFDM systems, Indonesian Journal of Electrical Engineering and Computer Science, pp. 239–247, vol. 20, no. 1, *Oct. 2020*. [JCR: 2.407, CiteScore: 2.9, Q2].

- A. Alsaraira, **S. Alabed**, and O. Saraereh, Multi-stage cryptography technique for wireless networks, vol. 22, no. 3, Telecommunication Computing Electronics and Control, **June 2024**. [CiteScore: 3.8, Q2 CiteScore Quartile in Electrical and Electronic Engineering, SNIP: 0.558, SJR: 0.286, Q2].

- A. Shdefat, N. Mostafa, Z. Al-Arnaout, Y. Kotb, and **S. Alabed**, Optimizing HAR Systems: Comparative Analysis of Enhanced SVM and k-NN Classifiers, International Journal of Computational Intelligence Systems, **May 2024**, https://doi.org/10.1007/s44196-024-00554-0.

- A. Alsaraira, K. Younes, **S. Alabed**, and O. Saraereh, Wireless Controlled Robotic Hand using an LED-LDR Sensor, Engineering, Technology & Applied Science Research, vol. 14, no. 5, **2024**.

- **S. Alabed**, Computationally efficient multi-antenna techniques for multi-user two-way wireless relay networks, International Journal of Electrical and Computer Engineering, pp. 1684-1691, vol. 8, no. 3, *June 2018*. http://www.iaescore.com/journals/index.php/IJECE/article/view/8962, [JCR: 2.407, CiteScore: 3.2; Q2].

- I. Maaz, J. Conrat, J. Cousin and **S. Alabed**, Impact of engineering parameters on performance of relay-assisted network, Indonesian Journal of Electrical Engineering and Computer Science, pp. 248–255, vol. 20, no. 1, *Oct. 2020*. [JCR: 2.407, CiteScore: 2.9, Q2].

- **S. Alabed**, Performance analysis of bi-directional relay selection strategy for wireless cooperative communications, EURASIP Journal on Wireless Communications and Networking, vol. 2019, no. 97, *April 2019*. DOI: https://doi.org/10.1186/s13638-019-1417-1. [SNIP: 1.03, JCR: 2.407, CiteScore: 7.6], Q2. https://jwcn-eurasipjournals.springeropen.com/articles/10.1186/s13638-019-1417-1

- **S. Alabed**, Performance Analysis of Differential Beamforming in Decentralized Networks, International Journal of Electrical and Computer Engineering, pp. 1692-1700, vol. 8, no. 3, *June 2018*. [JCR: 2.407, CiteScore: 3.2; Q2]. http://www.iaescore.com/journals/index.php/IJECE/article/view/8877

- **S. Alabed**, Performance Analysis of Two-Way DF Relay Selection Techniques, ELSEVIER ICT Express, Special Issue on ICT Convergence in the Internet of Things (IoT), pp. 91-95, vol. 2, no. 3, *Sep. 2016*. [Q1, IF: 4.8, CiteScore: 10.3, SNIP: 2.246]. https://www.sciencedirect.com/science/article/pii/S2405959516300595

- **S. Alabed** and E. Ibrahim, A new sinusoidal speech coding technique with speech enhancement at low bit rate, International Journal of Electronics and Communication Engineering and Technology (IJECET), ISSN 0976 - 6464(Print), ISSN 0976 - 6472(Online), Volume 5, Issue 4, *Apr. 2014*, pp. 07-18. (Impact Factor > 2)

- **S. Alabed**, J. M. Paredes, and A. B. Gershman, A low complexity decoder for quasi-orthogonal space-time block codes, IEEE Transactions on Wireless Communications, vol. 10, no. 3, *March 2011*. (IF= 8.3, CiteScore: 15.7).

- **S. Alabed**, J. M. Paredes, and A. B. Gershman, A simple distributed space-time coded strategy for two-way relay channels, IEEE Transactions on Wireless Communications, pp. 1260-1265, vol. 11, no. 4, *April, 2012*. (IF= 8.3, CiteScore: 15.7).

- **S. Alabed**, M. Pesavento, and A. Klein, Non-coherent distributed space-time coding techniques for two-way wireless relay networks, EURASIP special issue on Sensor Array Processing, *Jan. 2013*. [SNIP: 1.03, JCR: 2.407, CiteScore: 7.6].

- I. Mansour and **S. Alabed**, A new architecture model for multi pulse linear predictive coder for low bit rate speech coder, Engineering Sciences, Dirasat Journal, vol. 33, no. 2, *October 2006*.

CONFERENCE PAPERS

I have served as an organizer and track chair for several International Workshops and Conferences from 2008 to 2024 such as IEEE SAM 2008, CAMUS workshop 2011-2014, CoCoon Conferences 2011-2015, IEEE/ITG 2013-2015, IEEE REM 2024, ICBME 2024. I have participated at the university level in several conferences such as (QS HIGHER ED SUMMIT: MIDDLE EAST 2024), the Higher Education Summit: Middle East, February 27-29, 2024, and the Higher Education Summit: Asia Pacific 2023, November 7-9, 2023, to promote innovation, creativity, sustainability, and excellence in education and learning. I have attended, participated in, and successfully completed numerous webinars on research and teaching as well. In addition, over the past two years, I have been invited to and have participated in numerous national and international conferences and workshops focused on improving academic research and education at the national level. This is a result of my role as the head of several committees for the Jordanian National Qualification Framework (JNQF), where I collaborate with other national qualification frameworks, including the Scottish Qualification Framework (SCQF). Moreover, several articles have been submitted to international conferences in 2024. The following are the conference papers I have fully published:

- A. Schad, **S. Alabed**, H. Degenhardt, and M. Pesavento, Bi-Directional Differential Beamforming for Multi-Antenna Relaying, the 40th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2015, 19th – 24th April 2015, Brisbane, Queensland, Austrilia.

- D. Taleb, **S. Alabed**, and M. Pesavento, Optimal General-Rank Transmit Beamforming Technique for Multicasting Service in Modern Wireless Networks Using STTC, Proceedings of the 19th International IEEE/ITG Workshop on Smart Antennas (WSA 2015), Ilmenau, Germany, March 2015.

- **S. Alabed**, M. Pesavento, and A. Klein, Distributed Differential Space-Time Coding for Two-Way Relay Networks Using Analog Network Coding, Proc. of the 21st European Signal Processing Conference (EUSIPCO'13), Marrakech, Morocco, Sep. 2013.

- **S. Alabed**, M. Pesavento, and A. Klein, Relay Selection Based Space-Time Coding for Two-Way Wireless Relay Networks Using Digital Network Coding, The Tenth International Symposium on Wireless Communication Systems (IEEE ISWCS 2013), Ilmenau, Germany, Aug. 2013.

- **S. Alabed**, M. Pesavento, and A. B. Gershman, Distributed Differential Space-Time Coding Techniques for Two-Way Wireless Relay Networks, Proceedings of the Fourth International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP'2011), pp. 221-224, San Juan, Puerto Rico, December 2011.

- **S. Alabed** and M. Pesavento, A Simple Distributed Differential Transmit Beamforming Technique for Two-Way Wireless Relay Networks, Proceedings of the 16th International IEEE/ITG Workshop on Smart Antennas (WSA 2012), pp. 243-247, Dresden, March 2012.

- X. Wen, K.L. Law, **S. Alabed**, and M. Pesavento, Rank-Two Beamforming for Single-Group Multicasting Networks Using OSTBC, Proc. of the 7th IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM), pp. 65-68, Jun. 2012.

- I. Mansour and **S. Alabed**, Using Sinusoidal Model to Implement Sinusoidal Speech Coder with Speech Enhancer, The 6th Jordanian International Electrical and Electronics Engineering Conference (JIEEEC), vol. 1, pp. 1-8, March 2006.

- I. Mansour and **S. Alabed**, A New Technique for Regular Pulse Predictive Coding of Speech at Low Bit Rates, 6th ICEENG, 27-29 May, 2008.

BOOK CHAPTERS

- W. Aly, H. Kanj, **S. Alabed**, N. Mostafa, and K. Safi, "OpenFlow SDN Controller Placement using Closed Loop Approaches". In: Le Nhu Ngoc Thanh, editor. Prime Archives in Electronics. Hyderabad, India: Vide Leaf. **2023.** https://videleaf.com/wp-content/uploads/2023/02/OpenFlow-SDN-Controller-Placement-using-Closed-Loop-Approaches.pdf

- W. Aly, H. Kanj, N. Mostafa, **S. Alabed**, "Towards Improving Security of OpenFlow SDN Controllers Using Closed Loop Approaches". In: Le Nhu Ngoc Thanh, editor. Prime Archives in Electronics. Hyderabad, India: Vide Leaf. **2023**. https://videleaf.com/wp-content/uploads/2023/02/Towards-Improving-Security-of-OpenFlow-SDN-Controllers-Using-Closed-Loop-Approaches.pdf

- N. Mostafa, W. Aly, **S. Alabed**, Z. Al-Arnaout, "Replica Management System in Cloud, Edge and IoT Environments Using Data Clustering Technique". In: Le Nhu Ngoc Thanh, editor. Prime Archives in Electronics. Hyderabad, India: Vide Leaf. **2023.** https://videleaf.com/wp-content/uploads/2022/12/Replica-Management-System-in-Cloud-Edge-and-IoT-Environments-Using-Data-Clustering-Technique.pdf.