

CURRICULUM VITAE

Dr. Ayman A. El-Saleh

PhD, MSc, BSc, SMIEEE

1. PERSONAL PARTICULARS

1.1 Personal Information:

Date of Birth : 28 Dhu'l-Qa'dah 1397 (Islamic)
: 10 November 1977 (Gregorian)
Gender : Male
Citizenship : Palestinian
Place of Birth : Saida, Lebanon
Hobbies : Football, chess & blogging
Marital Status : Married with two sons



1.2 Contact Information:

Address : Department of Electronics and Communication Engineering,
College of Engineering (COE), A'Sharqiyah University (ASU),
400 Ibra, Sultanate of Oman.
Contact Numbers : +968 71722530 (Mobile)
: +968 25401206 (Office)
Professional E-mail : ayman.elsaleh@asu.edu.om
Personal Email : ayman.elsaleh@gmail.com

1.3 Professional and Research Profiles:

Website : <https://www.asu.edu.om/Team/Details/42>
ORCID : <https://orcid.org/0000-0003-4754-9271>
Web of Science : <https://www.webofscience.com/wos/author/record/2097778>
Scopus Preview : <https://www.scopus.com/authid/detail.uri?authorId=26430961800>
Google Scholar : <https://scholar.google.com/citations?hl=en&user=k7kSHNAAAAAJ>
ResearchGate : <https://www.researchgate.net/profile/Ayman-El-Saleh>
LinkedIn : <https://www.linkedin.com/in/ayman-el-saleh-90394530/>

2. EDUCATION BACKGROUND

2.1 Summary of Academic Qualifications:

2012 Ph.D. of Electrical, Electronics & Systems Engineering (UKM, Malaysia)
2005 M.Sc. of Microelectronics Engineering (UKM, Malaysia)
1999 B.Sc. of Electrical & Electronics Engineering - Communications (OMU, Libya)

2.2 Education Details:

Degree : Doctor of Philosophy (Ph.D.)
Major : Electrical, Electronics & Systems Engineering (Wireless Communications)
Thesis Title : Multi-Objective Evolutionary Algorithms for Cooperative Spectrum Sensing in Cognitive Radio Networks
University : The National University of Malaysia (Universiti Kebangsaan Malaysia, UKM)
Duration : January 2007 - June 2012

Degree : Master of Engineering Sciences (M.Sc.)
Major : Microelectronics Engineering – Digital VLSI System Design
Thesis Title : Development of Multi-Purpose Hardware-based Genetic Algorithm
University : The National University of Malaysia (Universiti Kebangsaan Malaysia, UKM)
Duration : July 2004 - November 2005
CGPA : 3.81 (out of 4)

Degree : Bachelor of Science (B.Sc.)
Major : Electrical & Electronics Engineering (Communications)
Project Title : TV Antenna Design and Analysis
University : Omar Al-Mukhtar University (OMU), Libya
Duration : September 1994 - August 1999
Percentage : 83.3%

Level : General Secondary Education Certificate
School : Al-Qadisiyah Secondary School (Previously known as Al-Fateh Secondary School), Al-Beida, Libya
Year : 1994
Percentage : 95.3% (Ranked Third across the State of Libya)

Level : Basic Education Certificate
School : Al-Nasser Salah Ad-Deen Preparatory School, Al-Beida, Libya
Year : 1991
Percentage : 98.2% (Ranked First across the Municipality of Al-Jabal Al-Akhdar, Libya)

3. WORKING EXPERIENCE

01/10/2022 – present **Director of Research, Innovation and Technology Transfer**
A’Sharqiyah University (ASU), 400 Ibra, Sultanate of Oman
Website: www.asu.edu.om, Tel: +968 2540 1199

01/09/2021 – present **Associate Professor of Electronics & Communication Eng.**
College of Engineering (COE), A’Sharqiyah University (ASU)
400 Ibra, Sultanate of Oman, Website: www.asu.edu.om
Tel: +968 2540 1199

01/10/2020 – 30/09/2022 **Director of Research and Graduate Studies**
A’Sharqiyah University (ASU), 400 Ibra, Sultanate of Oman
Website: www.asu.edu.om, Tel: +968 2540 1199

- 02/02/2020 – 31/08/2020** **Acting Director of Research and Graduate Studies**
A'Sharqiyah University (ASU), 400 Ibra, Sultanate of Oman
Website: www.asu.edu.om, Tel: +968 2540 1199
- 01/09/2019 – 01/02/2020** **Chair of University Research & Enterprise Committee**
A'Sharqiyah University (ASU), 400 Ibra, Sultanate of Oman
Website: www.asu.edu.om, Tel: +968 2540 1199
- 10/09/2017 – 31/08/2021** **Assistant Professor of Electronics & Communication Eng.**
College of Engineering (COE), A'Sharqiyah University (ASU)
400 Ibra, Sultanate of Oman, Website: www.asu.edu.om
Tel: +968 2540 1199
- 05/10/2017 – 04/10/2019** **Adjunct Senior Lecturer**
Faculty of Engineering (FOE), Multimedia University (MMU)
Jalan Multimedia, 63100 Cyberjaya, Selangor, Malaysia.
Website: www.mmu.edu.my, Tel: +603 8312 5000/5018
- 01/01/2014 – 31/08/2017** **Chair – Wireless Communication Technology (CWT) Center**
Faculty of Engineering (FOE), Multimedia University (MMU)
Jalan Multimedia, 63100 Cyberjaya, Selangor, Malaysia.
Website: www.mmu.edu.my, Tel: +603 8312 5000/5018
- 01/06/2012 – 31/12/2013** **Chair – Center for Broadband Communications (CBC)**
Faculty of Engineering (FOE), Multimedia University (MMU)
Jalan Multimedia, 63100 Cyberjaya, Selangor, Malaysia.
Website: www.mmu.edu.my, Tel: +603 8312 5000/5018
- 01/07/2012 – 31/08/2017** **Senior Lecturer**
Faculty of Engineering (FOE), Multimedia University (MMU)
Jalan Multimedia, 63100 Cyberjaya, Selangor, Malaysia.
Website: www.mmu.edu.my, Tel: +603 8312 5000/5018
- 02/10/2006 – 30/06/2012** **Lecturer**
Faculty of Engineering (FOE), Multimedia University (MMU)
Jalan Multimedia, 63100 Cyberjaya, Selangor, Malaysia.
Website: www.mmu.edu.my, Tel: +603 8312 5000/5018

4. Career Description (Administration & Leadership)

4.1 Admin Positions @ ASU:

- **Director** Research, Innovation, and Technology Transfer Center (RITTC), October 2022 to present.
- **Director** Research and Graduate Studies Office (RGSO), October 2020 to September 2022.
- **Chair** Chair of Scientific Committee, the International Conference on Energy and Sustainability (ICES 2024), 23-24 April 2024.
- **Acting Director** Research and Graduate Studies, February 2020 to August 2020.

- **Research Focal Point** Publications Support Program (PPS), MoHERI, September 2023 to present.
- **Research Focal Point** Block Funding Program (BFP), TRC/MoHERI, September 2019 to present.
- **Research Focal Point** Strategic Research Program (SRP), MoHERI, September 2019 to present.
- **Research Focal Point** EJAAD Research Program, MoHERI, September 2019 to present.
- **Academic Focal Point** EIDAAD Training Program, MoHERI, September 2021 to February 2023.
- **Chair** University Research and Enterprise Committee (UREC), September 2019 to January 2020.
- **Chair** Institutional Internal Evaluation Committee (IIEC) of TRC Block Funding Program, February 2019 to present.
- **Member** Accreditation and Standards Committee (ASC), September 2019 to present.
- **Member** University Academic Board (UAB), September 2017 to present.
- **Member** University Research and Enterprise Committee (UREC), September 2017 to August 2019.
- **Chair** College Research and Enterprise Committee (CREC), September 2017 to August 2019.
- **Supervisor** The Engineering Society, October 2017 – December 2019.
- **Member** ASU Website Committee, February 2019 – June 2019.
- **Member** E-learning Delivery Committee, 15 March 2020 – 15 April 2020

4.2 Major Administrative Projects @ ASU:

- **Establishment & Management of Research, Innovation and Technology Transfer Center (RITTC)**
[September 2022 to present]
 - Development and review of Operational Plan for the Research, Innovation, and Technology Transfer Center (RITTC).
 - Development and review of the University Research Strategy 2022-2025.
 - Development of Research Publication Incentive (RPI) Policy.
 - Review of Research Collaboration Visit (RCV) Policy.
 - Review of Conference Support Fund (CSF) Policy.
 - Review of Research Seed Fund (RSF) Policy.
 - Review of Intellectual Property Policy.
 - Review of Faculty Workload Policy.
 - Review of Research Ethics Policy.
 - Development of management procedures for all the aforementioned policies
- **Qs Arab Region University Ranking Cycles 2023, 2024 and 2025**
[September 2021 to present]
 - Planning for the academic and employer reputations of the University.
 - Advising the Senior Management on the methodologies of QS World and Arab Regional University Rankings.

- Coordination with the QS Intelligence Unit (QSIU) as the University's contact point.
- Providing critical institutional data about the University's programs, staff, students, facilities, etc.
- Resulted in ASU entering the Qs Arab Region University Ranking 2024 for the first time.
- **ASU's Accreditation by the Oman Academic Accreditation Authority (OAAA)**
[September 2019 to present]
 - Contribution to the Writing Team of ISA applications with respect to Standard 4 (Staff Research and Consultancy).
 - Advising the Senior Management on the strengths and weaknesses of the University's performance.
 - Successfully obtained the accreditation by OAAA for ASU in January 2024.
- **Development of Operational Plans and Research Management Policies and Procedures**
[September 2019 to present]
 - Development of Operational Plan for the Research Graduate Studies Office (RGSO).
 - Development of Policy for Recruitment of Researchers on Funded Research Projects.
 - Development and review of various research policies as mentioned under RITTC above.
- **Establishment & Management of Research and Graduate Studies Office (RGSO)**
[September 2019 to present]
 - Development and implementation of strategic and operational plans for institutional research.
 - Performance evaluation and monitoring of the research-related Key Performance Indicators (KPIs) of the strategic and operational plans.
 - Development of quality research development series programs for Research Capacity building and Skills Development.
 - Development of motivational, supportive and incentive research programs.
- **Evaluation of Research Grant Proposals & Management of Research Projects under the Block Funding Program of MoHERI**
[Call 2018 to Call 2022]
 - Internal Institutional Evaluation and External Peer Review of research grant proposals submitted under Calls 2018, 2019, 2020, 2021, 2022 and 2023 of the Block Funding Program of the Ministry of Higher Education, Research and Innovation (MoHERI) in Oman.
 - Management of research projects from the stage of approval until successful completion.
 - Recruitment of research assistants with various employment and service modes.
 - Enhancement of research infrastructure and facilities.
- **Development of New Faculty Workload Policy**
[September 2022 to present]

- **Development of Key Performance Indicator (KPI) based Performance Appraisal System for Academic Staff**
[September 2022 to present]

4.3 Admin Positions @ MMU:

- **Technical Advisor** Ideation Round Table, TMR&D, August 2017 to August 2017.
- **Theme Leader** Connectivity Research Theme, April 2017 to August 2017.
- **Chairperson** Centre for Wireless Technology (CWT), January 2014 to August 2017.
- **Chairperson** Centre for Broadband Communications (CBC), July 2013 to December 2013.
- **Member** R&D Committee, Faculty of Engineering, January 2016 to August 2017.
- **Member** Students Academic Affairs Committee (SAAC), 24 Oct 2012 to August 2017.
- **Member** Self-Appraisal Committee (SeAC), 24 Oct 2012 to August 2017.
- **Member** University R&D Committee, June 2012 – December 2014.
- **Invited Member** Faculty R&D Committee, June 2012 - August 2017.
- **Member** 3rd MMU Engineering Research Colloquium and Exhibition (MERCE 2011) Committee, May 2011 to June 2011.
- **Lab Supervisor** Centre for Wireless Technology (CWT), January 2014 to August 2017.
- **Lab Supervisor** Centre for Broadband Communications (CBC), Dec 2009 to December 2013.
- **Member** Convocation Staff Committee, 12th MMU Convocation, 2011.
- **Member** Convocation Staff Committee, 9th MMU Convocation, 2008.
- **Member** EAC Task Force, 25th November 2008 to 25th December 2008.
- **Lab Co-Supervisor** Microprocessor Lab, Sep 2007 to Nov 2008.
- **Member** Industrial Training Program (ITP), June 2007 to December 2013.
- **Member** Centre for Broadband Communications, Nov 2006 to Dec 2013.

4.4 Major Administrative Projects @ MMU:

- **Establishment of Centre for Wireless Technology (CWT)**
[January 2014 - August 2017]
 - Development of the Centre's strategic and operational plans.
 - Development of the Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) budgets of the Centre.
 - Securing various research grants from the Ministry of Higher Education (MoHE) in Malaysia.
 - Organizing various international and national research activities, workshops, talks, etc.
- **Development of Institutional Strategic Research Theme**
[April 2017 to August 2017]

- Development of the institutional Connectivity Research Theme with the scope of wireless and wired communication engineering technologies.
- Implementation of the institutional Connectivity Research Theme via the horizontally-focused University's Research Centres of Excellence and the vertically-focused Colleges' Research Centres.

5. Career Description (Teaching & Learning)

5.1 Highlights:

- Developing, delivering and teaching courses to undergraduate/postgraduate students.
- Carrying out tutorial classes to enhance problem-solving skills of students.
- Conducting laboratory sessions and group discussions.
- Supervising final year projects (FYPs) of undergraduate students and research projects for Master-by-course students.
- Supervising and co-supervising M.Sc. and Ph.D. students.
- Internal and External Examiner of M.Eng., M.Eng.Sc. and PhD theses.
- Expert in Proposal Defence Seminars and Work Completion Defence for PG Students.
- Preparing and grading examinations, laboratory reports and assignments.
- Invigilating final exams and midterm tests.
- Advising students on course and academic matters and career decisions.
- Applying Outcome-Based Education (OBE) and analysing learning outcomes (LOs) and Program Outcomes (POs) achievements.
- Serving on faculty committees dealing with course development, syllabus revision, curriculum planning and course benchmarking of MMU/ASU with national and overseas universities.
- Perform a variety of ad-hoc administrative duties such as Convocations, Open Days and Research Colloquiums.
- Attending faculty-level and university-level strategic meetings.
- Coordinating and placing students in local and overseas companies for their industrial training program (ITP).
- Visiting and examining trainees of our university while experiencing industrial exposure during their ITP placement.
- Discussing students' affairs and planning for stimulating under-performing and under-probation students to improve their performance.
- Planning, filing and checking OBE documents and preparing for program accreditation cycles.
- Serving in multiple administrative positions related to research management at ASU.

5.2 Taught Courses:

5.2.1 Undergraduate Courses:

(a) Courses Delivered at Multimedia University (MMU), Malaysia - 2006-2017:

- (1) ETM3136 Digital Communications (recoded as ETN3136)
- (2) ETN4086 Mobile and Satellite Communications
- (3) ETM2056 Data Communications and Computer Networks
- (4) ETM4096 Digital Signal Processing (DSP)

- (5) ETM2126 Information Theory and Error Correction (recoded as ETN2126)
- (6) ETM3076 Communications II (Digital Communications for non-telecom students)
- (7) EMG4066 Antenna and Propagation
- (8) EMT1026 Engineering Mathematics II (ODEs, PDEs & Integral Transforms)
- (9) EMT2046 Engineering Mathematics IV (Operational Research & Optimization)
- (10) EEN2056 Physical Electronics (Semiconductor Devices)
- (11) ENT2016 Solid State Electronics
- (12) EHM3066 Engineer and Society

(b) Courses Delivered at A’Sharqiyah University (ASU), Oman - 2017-present:

- (1) ENGR111 Computer Applications
- (2) ECEN112 Computer Programming
- (3) ECEN221 Circuits Theory I
- (4) ECEN322 Circuits Theory II
- (5) ECEN341 Signals and Systems
- (6) ECEN441 Digital Communication Systems
- (7) ECEN452 Electromagnetic Theory II
- (8) ECEN541 Digital Signal Processing (DSP)
- (9) ECEN551 Microwave Engineering
- (10) ECEN591 Capstone Design Project I
- (11) ECEN592 Capstone Design Project II
- (12) ENGR331 Applied Engineering Mathematics
- (13) EETE515 Optimization Techniques in Engineering
- (14) EETE4012 Introduction to Communication Systems

5.2.2 Postgraduate Courses (Master of Engineering in Telecommunications):

ETM7166 Digital Signal Processing Systems and Design in Telecommunications

5.3 Academic Evaluation Statistics

At MMU, the statistics of my teaching evaluation (out of 5) for Lectures and Tutorials by students from October 2006 to 2017:

- **Lectures Evaluation:** *Mean = 4.36/5, Standard Deviation = 0.33, No. of Trimesters = 22*
- **Tutorials Evaluation:** *Mean = 4.55/5, Standard Deviation = 0.34, No. of Trimesters = 20*

At ASU, the statistics for the students’ teaching evaluation of all my courses from 2017 to 2020 are as follows: *Weighted Averaged Evaluation Rate = 88%*

6. PG & UG STUDENT SUPERVISION

6.1 Postgraduate Student (PG) Supervision:

6.1.1 Structure A or By-Research Programs (Ph.D. and M.Eng.Sc.)

(1)	My Role	Main Supervisor
	Student Name	Tareq Mohammed Ali Al-Shami (ID: 1141600001)

Research Title	Multiobjective Optimization of Joint Power and Admission Control in Cognitive Radio Networks using Enhanced Swarm Intelligence.
Programme	Master of Engineering Science (M.Eng.Sc.)
Institute	Multimedia University (MMU), Malaysia.
Duration	January 2014 – September 2016.

(2)	My Role	Co-supervisor
	Student Name	Wasan Kadhim Saa'd (ID: P55885)
	Research Title	Doctor of Philosophy (Ph.D.)
	Programme	Evolutionary Algorithms for Sensing Static and Dynamic Primary User Signals in Cognitive Radio Networks.
	Institute	Universiti Kebangsaan Malaysia (UKM), Malaysia.
	Duration	July 2013 – December 2016

(3)	My Role	Main Supervisor changed to Co-supervisor (due to leaving MMU)
	Student Name	Mohammed Jaber Alam (ID: 1161403837)
	Research Title	Master of Engineering Science (M.Eng.Sc.)
	Programme	Adaptive Cell Association and Interference Mitigation Algorithms for Heterogeneous LTE-Advanced Cellular Networks.
	Institute	Multimedia University (MMU), Malaysia.
	Duration	April 2017 – February 2020

(4)	My Role	Main Supervisor changed to General Advisor (due to leaving MMU)
	Student Name	Waleed Senan Abdo Qatab (ID: 1151403324)
	Research Title	Master of Engineering Science (M.Eng.Sc.)
	Programme	Biologically-Inspired Optimization Schemes for Cognitive Femto-cellular LTE/LTE-Advanced Networks.
	Institute	Multimedia University (MMU), Malaysia
	Duration	January 2016 – July 2019

(5)	My Role	Co-supervisor
	Student Name	Lee Vei Hung
	Research Title	Doctor of Philosophy (M.Eng.Sc.)
	Programme	Practical Interference Alignment Techniques for 5G Communication Networks.
	Institute	Multimedia University (MMU), Malaysia.
	Duration	January 2018 – April 2020

(6)	My Role	Supervisor changed to General Advisor (due to leaving MMU)
	Student Name	MHD Amen Summakieh (ID: 1161403750)
	Research Title	Master of Engineering Science (M.Eng.Sc.)
	Programme	Optimization of Cell Association and Load Balancing in

		Heterogeneous LTE-Advanced Cellular Networks.
Institute		Multimedia University (MMU), Malaysia.
Duration		February 2017 – April 2020

6.1.2 Structure C or By-Course Programs (M.Eng.)

Students with Master by-course (M.Eng.) completed under my supervision:

(1)	My Role	Supervisor
	Student Name	Mohamed Mahir Gafer Mohamed (ID: 1131900002)
	Research Title	Recourse Management in Cognitive Radio Femto Cell
	Programme	Master of Engineering (M.Eng.) in Telecommunications
	Institute	Multimedia University (MMU), Malaysia.
	Duration	April 2017 – October 2017

(2)	My Role	Supervisor
	Student Name	Omar Watti (ID: 1121900014)
	Research Title	Cooperative Spectrum Sensing Using Cross-Entropy Optimization Method.
	Programme	Master of Engineering (M.Eng.) in Telecommunications
	Institute	Multimedia University (MMU), Malaysia.
	Duration	January 2014 – October 2014

(3)	My Role	Supervisor
	Student Name	Mohsen Akbari (ID: 1091900014)
	Research Title	Cooperative Spectrum Sensing using Swarm Intelligence.
	Programme	Master of Engineering (M.Eng.) in Telecommunications
	Institute	Multimedia University (MMU), Malaysia.
	Duration	June 2011 – June 2012

6.2 Undergraduate (UG) Student Supervision

Academic Year: 2020/2021 @ ASU

- (1) Human Activity Recognition (HAR) using smartphone sensor data
 - 1504307 Kawthar Obaid Salim AL Hajri
 - 1504318 Jouhara Nasser Marhoon AL Rahbi
 - 1504338 Raya Said 'Abdallah ALAameriya
- (2) Standard electronic farm
 - 1504221 Mazoon Salim Nasser ALJabri
 - 1504337 Maryam Thani Musabah ALubaidi
- (3) Smart green house
 - 1504078 Mohammed Hamid Mansoor ALRawahi
 - 1807431 Khalid Salim Khalfan Al Shidhani
- (4) Development of an Autonomous 'Follow me' Trolley
 - 1605386 Younis Khamis Hamed Al Brashdi

1605116 Waleed Muslem salim Al Haimli

Academic Year: 2019/2020 @ ASU

- (5) Development of Green, Secure and Smart Home Automation System
Said Al Rawahi, 1605129
Mahmood Al Rawahi, 1604607
Mahana AL Maskari, 1605168
- (6) Development of a Smart Solar Tracking (STT) System as a Green Renewable Energy Solution.
Bader Khalfan Alburmani 1504193
Abdul Aziz Saif Alshabibi 1504452
Salim Said Almadhoshi 1504476
Ahmed Said Alhimail 1504185

Academic Year: 2018/2019 @ ASU

- (7) Development and Performance Analysis of Adaptive Genetic Algorithm-Based Cognitive Radio System
Hajar Ahmed Al-Harthy, 1301902
Abir Talip Al-Mamari, 1302078
Zeyana Humaid Al-Habsi, 1302171
- (8) Performance Analysis of Genetic Algorithm Based Cognitive Radio System
Salha Salim Alsubhi, 1302212
Saleema Salim Al Maskari, 1302188
Muna Hamed Alhamhami, 1302235
- (9) Development of Ultra Sonic Based Traffic Flow Information System
Hamed Al-Shuaili, 1504145
Mohammed Al-Shuaili, 1504186
Taher Al-Rawahi, 1504248
- (10) Development of Automated Control System for Lights and Air Conditioners in Masjid
Issa Saleh Al Aamri, 1504106
Abdullah Hamed Al Musalami, 1504227
Waleed Hamed Al Khusaibi, 1504207
- (11) Underground Cable Fault Distance Locator
Mohammed Hamood Al Jufaili, 1504098
Mohammed Hamood Al Harthi, 1504556
- (12) Anti-Theft Car Security Control System
Mohammed Ahmed Almaskri, 1504512
Mohammed Abdullah Alhadidi, 1504137
Saif Suleiman Alshabibi, 1604676

Academic Year: 2015/2016 @ MMU

- (13) Optimized Energy Consumption for 4G Networks Using Evolutionary Algorithms, Rewathi Muthaiah & Sarah Adilah
- (14) Applications of Evolutionary Algorithms in LTE/LTE-Advanced Cellular Networks, Mahek Rajyaguru & Heli Rajyaguru

Academic Year: 2014/2015 @ MMU

- (15) Detection and Convergence Performance of Cooperative Spectrum Sensing using Differential Evolution Algorithms, Sadiq Ya'u Kaita.

Academic Year: 2013/2014 @ MMU

- (16) Applications of Differential Evolution Algorithms in Cognitive Radio Networks, Ng Pai Chet.
- (17) Application of Cross Entropy Algorithms in Wireless Communications, Siti Alia Aisyah Omar.
- (18) Genetic Algorithm with Multi-Parent Crossover for Cognitive Radio Networks, Mohammed Ali Ahmed.
- (19) Cross-Entropy Algorithm for Cognitive Radio Networks, Muaadh Zaid Yousef.

Academic Year: 2012/2013 @ MMU

- (20) Analytical Study on Continuous Particle Swarm Optimization, Mohammed Abdulwasea Mohammed Al-Abbasi.
- (21) Analytical Study on Genetic Algorithm, Nur Azlina Bt Mahat.

Academic Year: 2011/2012 @ MMU

- (22) Analytical Study on Particle Swarm Optimization with Applications on Cognitive Radio, Lee Ying Loong.
- (23) Multi-Objective Genetic Algorithm for Hybrid Soft-Hard Fusion in Cooperative Cognitive Radio Networks, Khaled Saleh.
- (24) Genetic Algorithm for Soft Fusion Based Cooperative Spectrum Sensing in Cognitive Radio Networks, Md. Kamal Hossain.

Academic Year: 2010/2011 @ MMU

- (25) Optimization of Spectrum Sensing and Opportunistic Spectrum Access in Cognitive Radio Networks, David Muhwezi Mvano.
- (26) Performance Evaluation of Hybrid Fusion Cluster-Based Cooperative Spectrum Sensing in Cognitive Radio Networks, Thong Wing Yew.
- (27) Performance Optimization of Hybrid Fusion Cluster-Based Cooperative Spectrum Sensing in Cognitive Radio Networks, Yap Ee Chiet.
- (28) Implementation of Genetic Algorithm For Hard Fusion Cooperative Spectrum Sensing in Cognitive Radio Networks, Nitya Krishnan.
- (29) Pragmatic Trellis Coded Modulation for Adaptive Multi-Objective Genetic Algorithm-Based Cognitive Radio, Arvin Raj K. Agisparayan.
- (30) Cooperative Spectrum Sensing Using Double Threshold Energy Detection for Cognitive Radio Systems, Poornachandran A/L Velayudhan.

Academic Year: 2009/2010 @ MMU

- (31) Analytical Study of Modulation-Coding Tradeoffs for Enhanced Implementation of Genetic Algorithm Based Cognitive Radio Systems, Lee Siu Chen.
- (32) Performance Analysis of Spectrum Sensing Techniques for Cognitive Radio Networks, Muhammad Ali toor.
- (33) Optimization of Cooperative Sensing in Cognitive Radio Networks, Israna Hossain Arka.
- (34) Sensing-Throughput Tradeoff for Cognitive Radio Networks, Salehin Kibria.
- (35) Development of A Cognitive Radio Decision Engine Using Adaptive Multi-Objective Hybrid Genetic Algorithm, Samuel A/L Selvarajah.
- (36) Reconfigurable Hardware-Based Genetic Algorithm-Driven Cognitive Radio Decision Engine, Tan Jun Rong.
- (37) Development of a Reconfigurable and Scalable Hardware-Based Genetic Algorithm, Christine Oo Tjin Voon.

Academic Year: 2008/2009 @ MMU

- (38) Development of a Cognitive Radio Decision Engine Using Adaptive Multi-Objective Evolutionary Algorithms, Jean Ng Ting Shunag.
- (39) A study and Performance Analysis on the Hybrid Genetic Algorithm, Meer Shaykh Ibn Monzur.
- (40) Comparison between Genetic Algorithm (GA) and Particle Swarm Optimization (PSO) in Mobile Network Design, Mark Christopher Chelliah & Viknesh Rajaratenam.
- (41) FPGA Realization of a Reconfigurable Hardware Genetic Algorithm (RHGA) Optimization Engine, Lee Jing Jenn.
- (42) Development of a Swarm Intelligence-based Cognitive Radio (SI-CR) Engine, Hamed Al Dhahri & Moussa Anis Ben Bechir.
- (43) On the Implementation of Genetic Algorithm in IC Design, Chong Chee Chung.
- (44) Design of an Automobile Monitoring System, Wong Hui Ping.
- (45) Implementation of a Wireless Alarm System, Teoh Teik Leong.

Academic Year: 2007/2008 @ MMU

- (46) Genetic Algorithm for Power Usage Reduction in Adaptive Beam-forming Smart Antenna: VHDL Modeling & FPGA Realization, Eng Chung Sik & Eng Johnyee.
- (47) Smart Antenna Bandwidth Projection Optimization with Genetic Algorithm, Faisal Mohammed Salem.
- (48) Digital VLSI Design of a Keyless Auto Entry and Control System for Automotive Applications, Victor Ong Chee Hoe & Lee Yu Zong.
- (49) Digital VLSI Design and Implementation of a Traffic Light Controller, Teh King Kiat.
- (50) Digital VLSI Design and Implementation of a Secure Alarm System, Lai Kim Teck.
- (51) Logic IC Tester System Design and Implementation, Goo Juen Kiet.
- (52) SMS based Smart Notification System Design and Implementation, Mohd Mizam bin Mohd Zawawi & Ahmad Najib bin Ahmad Redzan.
- (53) A Study on the Design and Performance of the Genetic Algorithm, Cheng Kang Qi.
- (54) Design and Implementation of a Home Automation System, Chin Chan Ying.
- (55) Local and Cooperative Spectrum Sensing Performance Analysis for Cognitive Radio Networks, Murtuza Al Mamun & Md. Iftekhar Salam.

7. RESEARCH PUBLICATIONS

Summary of Research Publications Data

Type of Publication	Number of Publications
Articles in International Refereed Journals	56
Articles in Conference Proceedings	68
Books/Book Chapters	4
Total	128

Google Scholar Research Metrics

Citation Source	Research Metric
Number of Citations	1670
h-index	19
i10-index	45

7.1 Papers Published in Refereed International Journals [Main Research Areas]:

- [1] Ibraheem Shayea, **Ayman A. El-Saleh**, Mustafa Ergen, Bilal Saoud, Riad Hartani, Derya Turan, and Adnan Kabbani, "Integration of 5G, 6G and IoT with Low Earth Orbit (LEO) Networks: Opportunity, Challenges and Future Trends," *Results in Engineering*, Elsevier, In Press, 102409, June 2024. DOI: <https://doi.org/10.1016/j.rineng.2024.102409>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 5.0
SJR Quartile: Q1
- [2] Waheeb Tashan, Ibraheem Shayea, Muntasir Sheikh, Hüseyin Arslan, **Ayman A. El-Saleh**, Sawsan Ali Saad, "Adaptive handover control parameters over voronoi-based 5G networks," *Engineering Science and Technology, an International Journal*, vol. 54, no. 101722, June 2024. DOI: <https://doi.org/10.1016/j.jestch.2024.101722>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 5.155
SJR Quartile: Q1
- [3] **Ayman A. El-Saleh**, Abdul Manan Sheikh, Mahmoud A. M. Albreem and Mohamed Shaik Honnurvali, "The Internet of Medical Things (IoMT): opportunities and challenges," *Wireless Networks*, Springer, May 2024.
DOI: <https://doi.org/10.1007/s11276-024-03764-8>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 2.1
Scopus Quartile: Q1
- [4] Waheeb Tashan, Ibraheem Shayea, Sultan Aldirmaz-Colak, **Ayman A. El-Saleh**; and Hüseyin Arslan, "Optimal Handover Optimization in Future Mobile Heterogeneous Network using Integrated Weighted and Fuzzy Logic Models," *IEEE Access*, early access, April 2024. DOI: <https://doi.org/10.1109/ACCESS.2024.3390559>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.476
SJR Quartile: Q1

- [5] Safak Sonmez, Kenan Furkan Kaptan, Muhammet Ali Tunç, Ibraheem Shayea, **Ayman A. El-Saleh** and Bilal Saoud, “Handover management procedures for future generations mobile heterogeneous networks,” *Alexandria Engineering Journal*, vol. 96, pp. 344-354, April 2024. DOI: <https://doi.org/10.1016/j.aej.2024.03.095>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626
SJR Quartile: Q1
- [6] Abdulraqeb Alhammedi, Ibraheem Shayea, **Ayman A. El-Saleh**, Marwan Hadri Azmi, Zool Hilmi Ismail, Lida Kouhalvandi and Sawan Ali Saad, “Artificial Intelligence in 6G Mobile Technology: Opportunity, Applications and Challenges,” *International Journal of Intelligent Systems, Wiley-Hindawi*, vol. 2024, March 2024.
DOI: <https://doi.org/10.1155/2024/8845070>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 7.0
SJR Quartile: Q1
- [7] Havva Elif Saroglu, Ibraheem Shayea, Bilal Saoud, Marwan Hadri Azmi, **Ayman A. El-Saleh**, Sawsan Ali Saad, and Mohammad Alnakhli, “Machine learning, IoT and 5G technologies for breast cancer studies: A review,” *Alexandria Engineering Journal, Elsevier*, vol. 89, pp. 210-223, February 2024.
DOI: <https://doi.org/10.1016/j.aej.2024.01.043>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626
SJR Quartile: Q1
- [8] Bilal Saoud, Ibraheem Shayea, Marwan Hadri Azmi, **Ayman A. El-Saleh**, “New scheme of WSN routing to ensure data communication between sensor nodes based on energy warning,” *Alexandria Engineering Journal, Elsevier*, vol. 80, pp. 397-407, October 2023.
DOI: <https://doi.org/10.1016/j.aej.2023.08.058>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626
SJR Quartile: Q1
- [9] Wasan Kadhim Saad, Ibraheem Shayea, Abdulraqeb Alhammedi, Muntasir Mohammad Sheikh, and **Ayman A. El-Saleh**, “Handover and Load Balancing Self-Optimization Models in 5G Mobile Networks,” *Engineering Science and Technology, an International Journal, Elsevier*, vol. 42, pp. 1-18, June 2023.
DOI: <https://doi.org/10.1016/j.jestch.2023.101418>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 5.155
SJR Quartile: Q1
- [10] Emre Gures, Ibraheem Shayea, Muntasir Sheikh, Mustafa Ergen and **Ayman A. El-Saleh**, “Adaptive Cell Selection Algorithm for Balancing Cell Loads in 5G Heterogeneous Networks,” *Alexandria Engineering Journal, Elsevier*, vol. 72, pp. 621-634, June 2023.
DOI: <https://doi.org/10.1016/j.aej.2023.04.012>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626
SJR Quartile: Q1
- [11] Emre Gures, Ibrahim Yazici, Ibraheem Shayea, Muntasir Sheikh, Mustafa Ergen and **Ayman A. El-Saleh**, “A Comparative Study of Machine Learning-Based Load Balancing in High-Speed Train System,” *Alexandria Engineering Journal, Elsevier*, vol. 72, pp. 635-647, June 2023.
DOI: <https://doi.org/10.1016/j.aej.2023.04.013>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626

SJR Quartile: Q1

- [12] **Ayman A. El-Saleh**, Majan Abdullah Al Jahdhami, Abduraqeb Alhammadi, Zaid Shamsan, and Ibraheem Shayea, “Measurements and Analyses of 4G/5G Mobile Broadband Networks: An Overview and A Case Study,” *Wireless Communications & Mobile Computing*, April 2023.
DOI: <https://doi.org/10.1155/2023/6205689>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 2.146
SJR Quartile: Q2
- [13] Emre Gures, Ibraheem Shayea, Sawsan Ali Saad, Mustafa Ergen, **Ayman A. El-Saleh**, Nada M.O. Sid Ahmed, and Mohammad Alnakhli, “Load balancing in 5G heterogeneous networks based on automatic weight function,” *ICT Express, Elsevier*, vol. 9, no. 6, pp. 1019-1025, December 2023.
DOI: <https://doi.org/10.1016/j.icte.2023.03.008>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 4.754
SJR Quartile: Q1
- [14] **Ayman A. El-Saleh**, Abduraqeb Alhammadi, Ibraheem Shayea, Wan Haslina Hassan, Mohamed Shaik Honnurvali and Yousef Ibrahim Daradkeh “Measurement Analysis and Performance Evaluation of Mobile Broadband Cellular Networks in a Populated City,” *Alexandria Engineering Journal, Elsevier*, vol. 66, pp. 927-946, March 2023.
DOI: <https://doi.org/10.1016/j.aej.2022.10.052>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626
SJR Quartile: Q1
- [15] Mahmoud A. Albreem, Abdul Manan Sheikh, Mohammed Bashir and **Ayman A. El-Saleh**, “Towards Green Internet of Things (IoT) for a Sustainable Future in Gulf Cooperation Council Countries: Current Practices, Challenges and Future Prospective,” *Wireless Networks, Springer*, vol. 29, pp. 539–567, February 2023.
DOI: <https://doi.org/10.1007/s11276-022-03133-3>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 2.701
SJR Quartile: Q2
- [16] Helong Yu, Shimeng Qiao, Ali Asghar Heidari, **Ayman A. El-Saleh**, Chunguang Bi, Majdi Mafarja, Zhennao Cai and Huiling Chen, “Laplace Crossover and Random Replacement Strategy Boosted Harris Hawks Optimization: Performance Optimization and Analysis,” *Journal of Computational Design and Engineering, Oxford Academic*, Vol. 9, No. 5, pp. 1879–1916, October 2022. DOI: <https://doi.org/10.1093/jcde/qwac085>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.167
SJR Quartile: Q1
- [17] Shimeng Qiao, Helong Yu, Ali Asghar Heidari, **Ayman A. El-Saleh**, Zhennao Cai, Xingmei Xu, Majdi Mafarja and Huiling Chen, “Individual Disturbance and Neighborhood Mutation Search Enhanced Whale Optimization: Performance Design for Engineering Problems,” *Journal of Computational Design and Engineering, Oxford Academic*, vol. 9, no. 5, pp. 1817–1851, October 2022.
DOI: <https://doi.org/10.1093/jcde/qwac081>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.167
SJR Quartile: Q1

- [18] **Ayman A. El-Saleh**, Abdulraqeb Alhammadi, Ibraheem Shayea, Azizul Azizan and Wan Haslina Hassan, "Mean Opinion Score Estimation for Mobile Broadband Networks Using Bayesian Networks," *Computers, Materials & Continua*, vol. 72, no. 3, 2022, pp. 4571-4587, April 2022. DOI: <https://doi.org/10.32604/cmc.2022.024642>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.860
SJR Quartile: Q1
- [19] Abdulraqeb Alhammadi, Wan Haslina Hassan, **Ayman A. El-Saleh**, Ibraheem Shayea, Hafizal Mohamad and Yousef Ibrahim Daradkeh, "Conflict Resolution Strategy in Handover Management for 4G/5G Networks," *Computers, Materials & Continua*, vol. 72, no. 3, pp. 5215-5232, April 2022. DOI: <https://doi.org/10.32604/cmc.2022.024713>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.860
SJR Quartile: Q1
- [20] Abdulraqeb Alhammadi, Wan Haslina Hassan, **Ayman A. El-Saleh**, Ibraheem Shayea, Hafizal Mohamad and Wasan Kadhim Saad, "Intelligent Coordinate Self-Optimizing Handover Scheme for 4G/5G Heterogeneous Networks," *ICT Express, Elsevier*, May 2022. DOI: <https://doi.org/10.1016/j.icte.2022.04.013>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 4.754
SJR Quartile: Q1
- [21] Emre Gures, Ibraheem Shayea, Mustafa Ergen, Marwan Hadri Azmi and **Ayman A. El-Saleh**, "Machine Learning Based Load Balancing Algorithms in Future Heterogeneous Networks: A Survey," *IEEE Access*, vol. 10, pp. 37689-37717, April 2022.
DOI: <https://doi.org/10.1109/ACCESS.2022.3161511>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.476
SJR Quartile: Q1
- [22] Ibraheem Shayea, Abdulraqeb Alhammadi, **Ayman A. El-Saleh**, Wan Haslina Hassan, Hafizal Mohamad and Mustafa Ergen, "Time Series Forecasting Model of Future Spectrum Demands for Mobile Broadband Networks in Malaysia, Turkey, and Oman," *Alexandria Engineering Journal, Elsevier*, vol. 61, no. 10, pp. 8051-8067, October 2022.
DOI: <https://doi.org/10.1016/j.aej.2022.01.036>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.626
SJR Quartile: Q1
- [23] Iyad Khalil Tumar, Adnan Mohammad Arar, **Ayman A. El-Saleh**, "Utilization of Idle Time Slot in Spectrum Sensing under Noise Uncertainty," *International Journal of Electrical and Computer Engineering*, vol. 12, no. 1, pp. 431-444, February 2022.
DOI: <http://doi.org/10.11591/ijece.v12i1.pp431-444>
Journal Indexing: Scopus, CiteScore: 2.3
SJR Quartile: Q2
- [24] **Ayman El-Saleh**, Abdulraqeb Alhammadi, Ibraheem Shayea, Nizar Alsharif, Nouf Alzahrani, Osamah Ibrahim Khalaf and Theyazn H.H. Aldhyani, "Measuring and Assessing Performance of Mobile Broadband Networks and Future 5G Trends in Oman," *Sustainability*, vol. 14, no. 2: 829, January 2022.
DOI: <https://doi.org/10.3390/su14020829>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.889
SJR Quartile: Q1

- [25] Tareq M. Shami, **Ayman A. El-Saleh**, Mohammed Alswaiti, Mhd Amen Summakieh, Qasem Al-Tashi and Seyedali Mirjalili, "Particle Swarm Optimization: A Comprehensive Survey," *IEEE Access*, vol. 10, pp. 10031-10061, January 2022.
DOI: <https://doi.org/10.1109/ACCESS.2022.3142859>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.476
SJR Quartile: Q1
- [26] Mohammad Kamrul Hasan, Teong Chee Chuah, **Ayman A. El-Saleh**, Muhammad Shafiq, Shoaib Ahmed Shaikh, Shayla Islam, Moez Krichen, "Constriction Factor Particle Swarm Optimization based Load Balancing and Cell Association for 5G Heterogeneous Networks," *Computer Communications, Elsevier*, vol. 180, pp. 328-337, December 2021.
DOI: <https://doi.org/10.1016/j.comcom.2021.10.021>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 5.047
SJR Quartile: Q1
- [27] Ibraheem Shayea, Marwan Hadri Azmi, Mustafa Ergen, **Ayman A. El-Salah**, Chua Tien Han, Arsany Arsad, Tharek Abd. Rahman, Abdulraqeb Alhammadi, Yousef Ibrahim Daradkeh and Dalia Nandi "Performance Analysis of Mobile Broadband Networks with 5G Trends and Beyond: Urban Areas Scope in Malaysia," *IEEE Access*, vol. 9, pp. 90767-90794, July 2021, DOI: <https://doi.org/10.1109/ACCESS.2021.3085782>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.476
SJR Quartile: Q1
- [28] **Ayman A. El-Saleh**, Tareq M. Shami, Rosdiadee Nordin, Mohamad Y. Alias, and Ibraheem Shayea, "Multi-Objective Optimization of Joint Power and Admission Control in Cognitive Radio Networks Using Enhanced Swarm Intelligence," *Electronics*, vol. 10, no. 2, pp. 189, Jan. 2021, DOI: <http://dx.doi.org/10.3390/electronics10020189>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 2.690
SJR Quartile: Q2
- [29] Ying Loong Lee, Wei Lun Tan, Simon Bounng Yew Lau, Teong Chee Chuah, **Ayman A. El-Saleh** and Donghong Qin, "Joint Cell Activation and User Association for Backhaul Load Balancing in Green HetNets," *IEEE Wireless Communications Letters*, May 2020, DOI: <https://doi.org/10.1109/LWC.2020.2994643>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 5.281
SJR Quartile: Q1
- [30] Ibraheem Shayea, Mustafa Ergen, Marwan Hadri Azmi, Dalia Nandi, **Ayman A. El-Salah**, Abdulhamid Zahedi, "Performance Analysis of Mobile Broadband Networks with 5G Trends and Beyond: Rural Areas Scope in Malaysia," *IEEE Access*, vol. 8, pp. 65211-65229, April 2020, DOI: <https://doi.org/10.1109/ACCESS.2020.2978048>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.476
SJR Quartile: Q1
- [31] Abdulhamid Zahedi, Mustafa Ergen, Onur Ergen, Ibraheem Shayea and **Ayman A. El-Saleh**, "Effective Capacity and Outage Probability Assessment of Multiple-Relay Cognitive Communication Systems in Nakagami-m and Rayleigh Fading Channel," *Transactions on Emerging Telecommunications Technologies, John Wiley & Sons Ltd*, vol. 31, no. 4, April 2020, DOI: <https://doi.org/10.1002/ett.3841>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.310
SJR Quartile: Q2

- [32] Mhd Amen Summakieh, Chee Keong Tan, **Ayman A. El-Saleh**, and Teong Chee Chuah, "Improved Load Balancing for LTE-A Heterogeneous Networks using Particle Swarm Optimization," *International Journal of Technology (IJTech)*, vol. 10, no. 7, pp. 1407-1415, November 2019, DOI: <https://doi.org/10.14716/ijtech.v10i7.3253>
Journal Indexing: Emerging Science Citation Index (ESCI)/Scopus
SJR Quartile: Q2
- [33] Ying Loong Lee, Teong Chee Chuah, **Ayman A. El-Saleh**, and Jonathan Loo, "User Association for Backhaul Load Balancing with Quality of Service Provisioning for Heterogeneous Networks," *IEEE Communications Letters*, vol. 22, no. 11, pp. 2338-2341, November 2018, DOI: <https://doi.org/10.1109/LCOMM.2018.2867181>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 3.553
SJR Quartile: Q1
- [34] Ying Loong Lee, Jonathan Loo, Teong Chee Chuah and **Ayman A. El-Saleh**, "Multi-Objective Resource Allocation for LTE/LTE-A Femtocell/HeNB Networks using Ant Colony Optimisation," *Wireless Personal Communications*, vol. 92, pp. 565-586, January 2017, DOI: <https://doi.org/10.1007/s11277-016-3557-5>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 2.017
SJR Quartile: Q3
- [35] Ying Loong Lee, Jonathan Loo, Teong Chee Chuah and **Ayman A. El-Saleh**, "Fair Resource Allocation with Interference Mitigation and Resource Reuse in LTE / LTE-A Femtocell Networks," *IEEE Transactions on Vehicular Technology*, vol. 65, no. 10, pp. 8203-8217, October 2016, DOI: <https://doi.org/10.1109/TVT.2016.2514535>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 6.239
SJR Quartile: Q1
- [36] Wasan Kadhim Saad, Mahamod Ismail, Rosdiadee Nordin and **Ayman A. El-Saleh**, "Spectrum Sensing Schemes for Dynamic Primary User Signal under AWGN and Rayleigh Fading Channels," *Journal of Communications (JCM)*, vol. 11, no. 3, pp. 231-241, March 2016, DOI: <https://doi.org/10.12720/jcm.11.3.231-242>
Journal Indexing: Scopus, SJR: 0.129
SJR Quartile: Q3
- [37] Wasan Kadhim Saad, Mahamod bin Ismail, Rosdiadee bin Nordin, **Ayman Abd El-Saleh**, "Spectrum Sensing Schemes for Static Primary User Signal under AWGN and Rayleigh Fading Channels," *Journal of Theoretical and Applied Information Technology*, vol. 79, no. 2, pp. 291-309, September 2015.
Journal Indexing: Scopus, SJR: 0.17
SJR Quartile: Q4
- [38] Mohsen Akbari, Mohsen Riahi Manesh, **Ayman A. El-Saleh** and Ahmed Wasif Reza, "Receive Diversity Combining Using Evolutionary Algorithms in Rayleigh Fading Channel," *The Scientific World Journal*, vol. 2014, pp. 1-11, June, 2014, DOI: <https://doi.org/10.1155/2014/128195>
Journal Indexing: Scopus, SJR: 0.39
SJR Quartile: Q2

- [39] Zienab Pouladmast Ghadiri, **Ayman A. El-Saleh*** and Gobi Vetharatnam, "Evolutionary Algorithm-based Space Diversity for Imperfect Channel Estimation," *The KSII Transactions on Internet and Information Systems* (TIIS), Vol. 8, No. 5, pp. 1588-1603, May, 2014, DOI: <https://doi.org/10.3837/tiis.2014.05.005>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.972
SJR Quartile: Q3
- [40] Moayad Husein Flaifel, Sahrim Hj Ahmad, Mustaffa Hj Abdullah, Rozaidi Rasid, Abdul Halim Shaari, **Ayman A. El-Saleh**, Sivanesan Appadu, "Preparation, thermal, magnetic and microwave absorption properties of thermoplastic natural rubber matrix impregnated with NiZn ferrite nanoparticles", *Composites Science and Technology*, vol. 96, pp. 103–108, 96, March 2014, DOI: <https://doi.org/10.1016/j.compscitech.2014.03.016>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 9.879
SJR Quartile: Q1
- [41] Ying Loong Lee, **Ayman A. El-Saleh*** and Mahamod Ismail, "Gravity-based particle swarm optimization with hybrid cooperative swarm approach for global optimization," *Journal of Intelligent & Fuzzy Systems*, vol. 26, no. 1, pp. 465-481, January 2014, DOI: <https://doi.org/10.3233/IFS-130872>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 1.737
SJR Quartile: Q2
- [42] Omar B. Abdul-Ghafoor, Mahamod Ismail, Rosdiadee Nordin and **Ayman A. El-Saleh**, "Resource Allocation in Spectrum Sharing ad-hoc Cognitive Radio Networks Based on Game Theory: An Overview," *The KSII Transactions on Internet and Information Systems* (TIIS), vol. 7, no. 12, pp. 2957-2986, December, 2013, DOI: <https://doi.org/10.3837/tiis.2013.12.001>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.972
SJR Quartile: Q3
- [43] Wasan Kadhim Saad, Mahamod Ismail, Rosdiadee Nordin and **Ayman A. El-Saleh**, "On the Performance of Cooperative Spectrum Sensing of Cognitive Radio Networks in AWGN and Rayleigh Fading Environments," *The KSII Transactions on Internet and Information Systems* (TIIS), vol. 7, no. 8, pp. 1754-1769, August, 2013, DOI: <https://doi.org/10.3837/tiis.2013.08.001>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.972
SJR Quartile: Q3
- [44] Ying Loong Lee, Wasan Kadhim Saad, **Ayman A. El-Saleh** and Mahamod Ismail, "Improved Detection Performance of Cognitive Radio Networks in AWGN and Rayleigh Fading Environments," *Journal of Applied Research and Technology*, vol. 11, no. 3, pp. 437-446, June 2013, DOI: [https://doi.org/10.1016/S1665-6423\(13\)71552-9](https://doi.org/10.1016/S1665-6423(13)71552-9)
Journal Indexing: Scopus, SJR: 0.31
SJR Quartile: Q2
- [45] Md. Kamal Hossain and **Ayman A. El-Saleh**, "Cognitive Radio Engine Model Utilizing Soft Fusion Based Genetic Algorithm for Cooperative Spectrum Optimization," *International Journal of Computer Networks and Communications* (IJCNC), vol. 5, no. 2, pp. 23-36, March 2013, DOI: <https://doi.org/10.5121/ijcnc.2013.5202>
Journal Indexing: Scopus, SJR: 0.16
SJR Quartile: Q4

- [46] Mohsen Akbari, Md. Kamal Hossain, Mohsen Riahi Manesh, **Ayman A. El-Saleh** and Aymen M. Kareem, “Minimizing Sensing Decision Error in Cognitive Radio Networks Using Evolutionary Algorithms,” *The KSII Transactions on Internet and Information Systems* (TIIS), vol. 6, no. 9, pp. 2037-2051, September, 2012, DOI: <https://doi.org/10.3837/tiis.2012.09.003>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.972
SJR Quartile: Q3
- [47] Aymen M. Kareem, **Ayman A. El-Saleh**, and Masuri Othman, “Combined Time Synchronization and Channel Estimation for MB-OFDM UWB Systems,” *The KSII Transactions on Internet and Information Systems* (TIIS), vol. 6, no. 7, pp. 1792-1801, July, 2012, DOI: <https://doi.org/10.3837/tiis.2012.07.004>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.972
SJR Quartile: Q3
- [48] Mohsen Akbari, Mohsen Riahi Manesh, **Ayman A. El-Saleh** and Mahamod Ismail, “Improved soft fusion-based cooperative spectrum sensing using particle swarm optimization,” *IEICE Electronics Express*, vol. 9, no. 6, pp. 436-442, March 2012, DOI: <https://doi.org/10.1587/elex.9.436>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.709
SJR Quartile: Q4
- [49] **Ayman A. El-Saleh**, Mahamod Ismail and Mohd Alauddin Mohd Ali, “Genetic algorithm-assisted soft fusion-based linear cooperative spectrum sensing,” *IEICE Electronics Express*, vol. 8, no. 18, pp. 1527-1533, September, 2011, DOI: <https://doi.org/10.1587/elex.8.1527>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.709
SJR Quartile: Q4
- [50] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd Alauddin Mohd Ali, and Israna H. Arka, “Hybrid SDF-HDF Cluster-Based Fusion Scheme for Cooperative Spectrum Sensing in Cognitive Radio Networks,” *The KSII Transactions on Internet and Information Systems* (TIIS), vol. 4, no. 6, pp. 1023-1041, December, 2010, DOI: <https://doi.org/10.3837/tiis.2010.12.003>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.972
SJR Quartile: Q3
- [51] **Ayman A. El-Saleh**, Mahamod Ismail, R. Viknesh, C. C. Mark and M. L. Chan, “Particle Swarm Optimization for Mobile Network Design,” *IEICE Electronics Express*, vol. 6, no. 17, pp. 1219-1225, September, 2009, DOI: <https://doi.org/10.1587/elex.6.1219>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 0.709
SJR Quartile: Q4

7.2 Other Papers **Published** in Refereed International Journals [On Education / Teaching & Learning]:

- [52] Fadi Abdel Fattah, Najla Al Mashaikha, Khalid Dahleez and **Ayman A. El-Saleh**, “A systematic review of E-learning Systems Adoption Before and During the COVID-19,”

Global Knowledge, Memory and Communication, vol. 73, no. 3, pp. 292-311, February 2024. DOI: <https://doi.org/10.1108/GKMC-02-2022-0033>
Journal Indexing: Scopus, CiteScore 2021: 2.4
SJR Quartile: Q3

- [53] Fadi Abdelfattah, Abrar Al Alawi, Khalid Dahleez; **Ayman A. El-Saleh**, “Reviewing the Critical Challenges Influencing the Adoption of the E-learning System in Higher Educational Institutions,” *Online Information Review*, Emerald, vol. 47, no. 7, pp. 1225-1247, November 2023.
DOI: <https://doi.org/10.1108/OIR-02-2022-0085>
Journal Indexing: Science Citation Index Expanded (SCIE)/Web of Science, IF: 2.901
SJR Quartile: Q1

- [54] Mohamed Shaik Honnurvali, **Ayman A. El-Saleh**, Abdul Manan Sheikh, Keng Goh, Naren Gupta and Tariq Umar, “Sustainable Engineering higher education in Oman-lessons learned from the pandemic (COVID-19), improvements, and suggestions in the teaching, learning, and administrative framework,” *Journal of Engineering Education Transformations (JEET)*, vol. 35, no. 3, pp. 52-69, January 2022.
DOI: <https://doi.org/10.16920/jeet/2022/v35i3/22088>
Journal Indexing: Scopus, CiteScore 2020: 0.4
SJR Quartile: Q3

- [55] Khalid Abed Dahleez, **Ayman A. El-Saleh**, Abrar Mohammed AL Alawi and Fadi Abdel Fattah, “Student learning outcomes and online engagement in time of crisis: The role of e-learning system usability and teacher behaviour,” *International Journal of Information and Learning Technology*, Emerald, vol. 38, no. 5, pp. 473-492, October 2021.
DOI: <https://doi.org/10.1108/IJILT-04-2021-0057>
Journal Indexing: Scopus, CiteScore 2020: 3.6
SJR Quartile: Q2

- [56] Khalid Abed Dahleez, **Ayman A. El-Saleh**, Abrar Mohammed AL Alawi and Fadi Abdel Fattah, “Higher education student engagement in times of pandemic: the role of e-learning system usability and teacher behavior,” *International Journal of Educational Management*, Emerald, vol. 35, no. 6, pp. 1312-1329, October 2021.
DOI: <https://doi.org/10.1108/IJEM-04-2021-0120>
Journal Indexing: Scopus, CiteScore 2020: 2.1
SJR Quartile: Q2

7.3 International Conferences [Main Research Areas]:

- [1] Emre Gures, Ibraheem Shayea, Ibrahim Yazici, Sawsan Ali Saad, and **Ayman A. El-Saleh**, “A Novel Self-Optimization Algorithm for 5G HetNets Using Automatic Weight Function and TOPSIS,” *The 2023 IEEE 28th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, Edinburgh, Scotland, 6–8 November 2023. DOI: <http://dx.doi.org/10.1109/CAMAD59638.2023.10478376>
- [2] Abdulaziz Saleh Aborujilah, Abdulaziz Al-Ashbi, Ibraheem Shayea, Abdul Hakim Mohammed, Abduraqeb Alhammadi, **Ayman A. El-Saleh**, and Abdul Ahad, “IoT Integration in Agriculture: Advantages, Challenges, and Future Perspectives: Short survey,” *The 10th International Conference on Wireless Networks and Mobile Communications*, Istanbul, Turkey, 26-28 October 2023.

DOI: <http://dx.doi.org/10.1109/WINCOM59760.2023.10322958>

- [3] Fatma Aktaş, Ibraheem Shayea, Mustafa Ergen, and **Ayman A. El-Saleh**, “AI-Enabled Routing in Next-Gen Networks: A Brief Overview,” *The 10th International Conference on Wireless Networks and Mobile Communications*, Istanbul, Turkey, 26-28 October 2023. DOI: <http://dx.doi.org/10.1109/WINCOM59760.2023.10322945>
- [4] Waheeb Tashan, Ibraheem Shayea, Sultan Aldirmaz-Colak, and **Ayman A. El-Saleh**, “Voronoi-Based Handover Self-Optimization Technique For Handover Ping-Pong Reduction in 5G Networks,” *The 10th International Conference on Wireless Networks and Mobile Communications*, Istanbul, Turkey, 26-28 October 2023. DOI: <http://dx.doi.org/10.1109/WINCOM59760.2023.10322901>
- [5] Ozan Emre Sabırlı, Mohamed Elamine Benlakehal, Ibraheem Shayea, **Ayman A. El-Saleh**, Abdurraqeb Alhammadı, “Network Core and Radio Access Network in 6G Communication Systems,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
- [6] Abdulaziz Alashbi, Abdul Hakim Mohammed, Ibraheem Shayea, and **Ayman A. El-Saleh**, “Software-Defined Mesh: Enhancing the Reliability and Flexibility with Comparison of MAC protocols of Mesh Wi-Fi Networks,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
- [7] Tareq M. Shami, Mhd Amen Summakieh, Mohammed Alswaitti, Majan Abdullah Al Jahdhami, Abdul Manan Sheikh, and **Ayman A. El-Saleh**, TPPSO: A Novel Two-Phase Particle Swarm Optimization, *The 3rd International Conference on Computer, Information Technology and Intelligent Computing (CITIC 2023)*, Malaysia/Online, 26-28 July 2023. Published in the *International Journal on Informatics Visualization (JOIV)*, vol. 7, no. 3-2 (2023), pp. xxxx-yyyy, DOI: <http://dx.doi.org/10.30630/joiv.7.3-2.2331>
Scopus-indexed: Q3
- [8] Nor Raihan Zulkefly, Ibraheem Shayea, and **Ayman A. El-Saleh**, “Review on NOMA Solution Technique in 5G System,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
- [9] Sejma Hasak, Nor Raihan Zulkefly, Ibraheem Shayea, **Ayman A. El-Saleh**, “Coverage-Based Location for 5G Base Stations,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
- [10] Adildabay Secilmis, Nurullah Aksu, Fares Abdulhafidh Dael, Ibraheem Shayea, and **Ayman A. El-Saleh**, Machine Learning-Based Fire Detection and Evaluation of Classification Models, *The 3rd International Conference on Computer, Information Technology and Intelligent Computing (CITIC 2023)*, Malaysia/Online, 26-28 July 2023. Published in the *International Journal on Informatics Visualization (JOIV)*, vol. 7, no. 3-2 (2023), pp. xxxx-yyyy, DOI: <http://dx.doi.org/10.30630/joiv.7.3-2.2332>
Scopus-indexed: Q3
- [11] Emre Gures, Ibraheem Shayea, and **Ayman A. El-Saleh**, “Enhancing Load Balancing Performance in 5G Heterogeneous Networks: A Study on Handover Control Parameters,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.

- [12] Waheeb Tashan, Halimcan Yaşar, Ibraheem Shayea, and **Ayman A. El-Saleh**, “Rain Rate and Rain Attenuation Analysis Over Millimeter Wave in Microwave 5G/6G Link Systems,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
- [13] Hasan Erkil, İlknur Aktı, Fares Abdulhafidh Dael, Ibraheem Shayea, and **Ayman A. El-Saleh**, Comparative Study of K-NN Algorithm for Transportation Mode Detection Using Mobile Phone Sensor Data, *The 3rd International Conference on Computer, Information Technology and Intelligent Computing (CITIC 2023)*, Malaysia/Online, 26-28 July 2023.
- [14] Mohamed Elamine Benlakehal, Abdesselam Hocini, Ibraheem Shayea, **Ayman A. El-Saleh**, Abdulraqeb Alhammadi, Djamel Khedrouche, Tayeb Ahmed Denidni, “Design and simulation of 1x2, 1x4 and 2x8 microstrip patch antenna arrays based on photonic crystals for improved gain performance in THz,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
Accepted in the *International Journal of Integrated Engineering (IJIE)*, In Press.
Scopus-indexed: Q3
- [15] Rajaa Mohammed Al-Alawi, Majan Abdullah Al Jahdhami, **Ayman A. El-Saleh**, and Abdulraqeb Alhammadi, “Assessing the Outdoor Quality of 4G/5G Mobile Service Providers in the Muscat Governorate of Oman,” *The Multimedia University Engineering Conference 2023 (MECON 2023)*, Malaysia/Online, 26-28 July 2023.
- [16] Majan Abdullah Al Jahdhami, Rajaa Mohammed Al-Alawi, **Ayman A. El-Saleh**, Abdulraqeb Alhammadi, “Indoor Quality Assessment of 4G/5G Mobile Service Providers in Muscat Governorate of Oman,” *The 10th International Conference On Electrical And Electronics Engineering (ICEEE 2023)*, Istanbul, Turkey, May 8-10, 2023. DOI: <https://doi.org/10.1109/ICEEE59925.2023.00040>
- [17] Emre Güreş, Ibraheem Shayea, Sawsan Ali Saad and **Ayman A. El-Saleh**, “Adaptive Handover Decision Algorithm for Load Balancing in 5G Heterogenous Networks,” *The 6th International Conference on Information and Computer Technologies (ICICT 2023)*, Raleigh, United States, 24-26 March 2023.
DOI: <https://doi.org/10.1109/ICICT58900.2023.00037>
- [18] Ali Şahin, Ibraheem Shayea, İbrahim Yazıcı, **Ayman A. El-Saleh** and Sawsan Saad, “Offloading Techniques in Mobile Edge Computing (MEC) for Future Wireless Networks,” *The International Conference on Smart Computing and Application (ICSCA2022)*, Ha'il, Saudi Arabia, 5-6 February 2023.
DOI: <https://doi.org/10.1109/ICSCA57840.2023.10087588>
- [19] Emre Gures, Ibraheem Shayea, Mustafa Ergen, Ayman A. El-Saleh, “Fuzzy logic-based load balancing algorithm in heterogeneous networks,” *The 2022 Workshop on Microwave Theory and Techniques in Wireless Communications (MTTW)*, pp. 210-215, Riga, Latvia, 5-7 October 2022. DOI: <https://doi.org/10.1109/MTTW56973.2022.9942604>
- [20] Kawthar Alhajri, Majan Abdullah Al Jahdhami and **Ayman A. El-Saleh**, “An Overview on Solar Tracking Systems,” *The 2022 Asia Conference on Electrical, Power and Computer Engineering (EPCE 2022)*, Shanghai, China, 22-24 April 2022.
DOI: <https://doi.org/10.1145/3529299.3533403>

- [21] Kawthar Alhajri, Majan Abdullah Al Jahdhami and **Ayman A. El-Saleh**, “An Overview on Control Systems for Smart Home,” *The 2022 Asia Conference on Electrical, Power and Computer Engineering (EPCE 2022)*, Shanghai, China, 22-24 April 2022.
DOI: <https://doi.org/10.1145/3529299.3533404>
- [22] Mahmoud A. M. Albreem, Abdul Manan Sheikh and **Ayman A. El-Saleh**, “Towards a Sustainable Environment with a Green IoT: An Overview,” *The 2022 International Conference on Computer Technologies (ICCT 2022)*, Virtual/Melaka, Malaysia, 24-26 February 2022. DOI: <https://doi.org/10.1109/ICCTech55650.2022.00017>
- [23] Waheeb Tashan, Ibraheem Shayea, Sultan Aldirmaz-Colak, Tharek Abdul Rahman, **Ayman A. El-Salah** and Mardeni Roslee, “Rain Rate and Rain Attenuation Over Millimeter Waves in Tropical Regions Based on Real Measurements,” *The 15th IEEE Malaysia International Conference on Communications 2021 (MICC 2021)*, Virtual, 1-2 December 2021. DOI: <https://doi.org/10.1109/MICC53484.2021.9642095>
- [24] Necmettin Bayar, W.T AL-Shaibani, Ibraheem Shayea, **Ayman A. El-Salah**, Azizul Azizan, Mardeni Roslee and Abdulkader Taha, “Spatial Fuzzy Clustering on Synthetic Aperture Radar Images to Detect Changes,” *The 15th IEEE Malaysia International Conference on Communications 2021 (MICC 2021)*, Virtual, 1-2 December 2021.
DOI: <https://doi.org/10.1109/MICC53484.2021.9642106>
- [25] Yasmin Nasser Mohamed, Ibraheem Shayea, Sajjad Ahmad Khan, **Ayman A. El-Salah** and Mardeni Roslee, “Power Quality Controller using Remote Control System,” *The 15th IEEE Malaysia International Conference on Communications 2021 (MICC 2021)*, Virtual, 1-2 December 2021. DOI: <https://doi.org/10.1109/MICC53484.2021.9642153>
- [26] Sajjad Ahmad Khan, Ibraheem Shayea, Mustafa Ergen, **Ayman A. El-Salah** and Mardeni Roslee, “An Improved Handover Decision Algorithm for 5G Heterogeneous Networks,” *The 15th IEEE Malaysia International Conference on Communications 2021 (MICC 2021)*, Virtual, 1-2 December 2021.
DOI: <https://doi.org/10.1109/MICC53484.2021.9642076>
- [27] Tayfun Celebi, Ibraheem Shayea, Sawsan Ali, **Ayman A. El-Salah** and Mardeni Roslee, “Histogram Equalization for Grayscale Images and Comparison with OpenCV Library,” *The 15th IEEE Malaysia International Conference on Communications 2021 (MICC 2021)*, Virtual, 1-2 December 2021.
DOI: <https://doi.org/10.1109/MICC53484.2021.9642082>
- [28] Majan Abdullah Al Jahdhami, **Ayman El-Saleh**, Abdulraqeb Alhammadi, Ibrahim Shayea, “Performance Analysis of Mobile Broadband Networks in Ibra City, Oman,” *The First International Conference on Artificial Intelligence and Big Data Analytics*, Bandung, Indonesia, 27-29 October 2021.
DOI: <https://doi.org/10.1109/ICAIBDA53487.2021.9689751>
- [29] Abdulraqeb Alhammadi, **Ayman El-Saleh** and Ibraheem Shayea, “MOS Prediction for Mobile Broadband Networks Using Bayesian Artificial Intelligence,” *The 2021 International Conference on Artificial Intelligence and Computer Science Technology (ICAICST 2021)*, Yogyakarta, Indonesia, 29-30 June, 2021.
DOI: <https://doi.org/10.1109/ICAICST53116.2021.9497834>

- [30] Mazoon Aljabri, Maryam Alobaidi and **Ayman A. El-Saleh**, “Electronic Hydroponics: Insights and the Case Study of Oman,” *The 2nd International Conference on Emerging Electrical Energy, Electronics and Computing Technologies (ICE4CT)*, Virtual Conference, Malaysia, 21-22 December, 2020, Published in the *Journal of Physics: Conference Series*, IOP Publishing Ltd, vol. 1878 012033, pp. 1-11, June 2021, DOI: <https://doi.org/10.1088/1742-6596/1878/1/012033>
- [31] Bader K. K. Al Bartamani and **Ayman A. El-Saleh**, “Development of a Smart Solar Tracking (SST) System as a Green Renewable Energy Solution,” *The 2020 International Conference on Electronics, Communications and Information Technology (CECIT 2020)*, Shenzhen, China, 26-28 December, 2020, Published in the *Journal of Physics: Conference Series*, IOP Publishing, vol. 1812, pp. 1-7, February 2021, DOI: <https://dx.doi.org/10.1088/1742-6596/1812/1/012009>
- [32] Ivan Ku, Lee Vei Hung, **Ayman A. El-Saleh**, Tuan Anh Lez and Mohamad Yusoff Alias, “Trade-Off Performances in Multiuser MIMO Networks with Quantized CSI Feedback,” *The 2020 IEEE 5th International Symposium on Telecommunication Technologies (ISTT)*, Shah Alam, Malaysia, 9–11 November 2020, pp. 145-150, DOI: <https://doi.org/10.1109/ISTT50966.2020.9279368>.
- [33] Mahmoud A. M. Albreem and **Ayman A. El-Saleh**, “Approximate Matrix Inversion Methods vs. Approximate Message Passing (AMP) for massive MIMO Detectors,” *2019 IEEE 14th Malaysia International Conference on Communication (MICC)*, Selangor, Malaysia, 2–4 December 2019, pp. 86-90, DOI: <https://doi.org/10.1109/MICC48337.2019.9037579>.
- [34] Lee Vei Hung, Ivan Ku, **Ayman A. El-Saleh**, Tuan Anh Le, Nur Idora Abdul Razak, and Mohamad Yusoff Alias, “Performance of Practical Multiuser MIMO Networks with Limited CSI Feedback,” *2019 IEEE 14th Malaysia International Conference on Communication (MICC)*, Selangor, Malaysia, 2–4 December 2019, pp. 118-123, DOI: <https://doi.org/10.1109/MICC48337.2019.9037598>.
- [35] **Ayman A. El-Saleh**, Mahmoud A. M. Albreem, Ibraheem Shayea, “Multiobjective Evolutionary Algorithm for Hybrid Cooperative Spectrum Sensing in Cognitive Radio Networks,” *9th International Conference on Computational Intelligence, Communication Systems and Networks (CICSyN 2019)*, Published in the *International Journal of Simulation: Systems, Science & Technology*, vol. 20, no. 5, pp. 13.1-13.7, October 2019, DOI: <https://doi.org/10.5013/IJSSST.a.20.05.13>
- [36] Mahmoud A. M. Albreem, **Ayman A. El-Saleh** and Markku Juntti, “On Approximate Matrix Inversion Methods for Massive MIMO Detectors,” *2019 IEEE Wireless Communications and Networking Conference (WCNC)*, Marrakech, Morocco, 15–19 April 2019, pp. 1-6, DOI: <https://doi.org/10.1109/WCNC.2019.8885673>
- [37] Mahmoud A. M. Albreem, **Ayman A. El-Saleh**, Wael A. Salah, M. Jusoh, and M. Azizan, “Encoding and Decoding for mmWave Massive MIMO Systems,” *2019 6th International Conference on Electrical and Electronics Engineering (ICEEE)*, Istanbul, Turkey, 16–17 April 2019, pp. 162-166,

DOI: <https://doi.org/10.1109/ICEEE2019.2019.00039>.

- [38] Vei Hung Lee, Ivan Ku, **Ayman A. El-Saleh** and Tuan Anh Le, “On the Efficiency of MIMO Transmission with Channel State Information Feedback,” *2019 26th International Conference on Telecommunications (ICT)*, Hanoi, Vietnam, 8–10 April 2019, pp. 406-410, DOI: <https://doi.org/10.1109/ICT.2019.8798642>.
- [39] MHD Amen Summakieh, Tan Chee Keong, **Ayman A. El-Saleh** and Teong Chee Chuah, “Improved Load Balancing for LTE-A Heterogeneous Networks using Particle Swarm Optimization,” *The International Conference of Advanced Science, Engineering and Technology (MECON)*, Selangor, Malaysia, 20–21 March 2019, DOI: <https://doi.org/10.14716/ijtech.v10i7.3253>
- [40] Mohammed Jaber Alam, **Ayman A. El-Saleh**, Chee Keong Tan, Ivan Ku, Ying Loong Lee and Teong Chee Chuah, “Improved Joint Cell Association and Interference Mitigation for LTE-A Heterogeneous Networks,” *2018 IEEE International Symposium on Telecommunication Technologies (ISTT)*, Selangor, Malaysia, 26–28 November 2018, pp. 1-4, DOI: <https://doi.org/10.1109/ISTT.2018.8701715>.
- [41] Mussab Nuri B. El-Haran, Wooi-Nee Tan, **Ayman A. El-Saleh**, and Siva Priya Thiagarajah, “Joint Subchannel and Power Allocation Optimization in Heterogeneous Networks”, *The Seventh International Conference on Advances in Computing, Communications and Informatics (ICACCI)*, Bangalore, India, 19–22 September 2018, pp. 1932–1937, DOI: <https://doi.org/10.1109/ICACCI.2018.8554925>.
- [42] **Ayman A. El-Saleh**, Mahmoud A. M. Albreem, Tauseef Rasheq Ahad, and Waziha Raquib, “Cross Entropy Algorithm for Improved Soft Fusion-based Cooperative Spectrum Sensing in Cognitive Radio Networks,” *2018 IEEE Middle East & North Africa COMMUNICATIONS Conference (MENACOMM)*, Jounieh, Lebanon, 18–20 April 2018, pp. 1-5, DOI: <https://doi.org/10.1109/MENACOMM.2018.8371020>.
- [43] Mahmoud A. M. Albreem, **Ayman A. El-Saleh**, Muzamir Isay, Wael Salah, M. Jusoh, M. M. Azizan, and A. Ali, “Green Internet of Things: An Overview,” *2017 IEEE 4th International Conference on Smart Instrumentation, Measurement and Applications (ICSIMA)*, Putrajaya, Malaysia, 28–30 November 2017, pp. 1-6, DOI: <https://doi.org/10.1109/ICSIMA.2017.8312021>.
- [44] Wasan Kadhim Saad, Mahamod Ismail, Rosdiadee Nordin and **Ayman A. El-Saleh**, “Multi-Stage Cross Entropy Optimization Algorithm for Hard Combining Schemes in Cognitive Radio Network,” *IEEE 12th Malaysia International Conference on Communications (MICC)*, Kuching, Malaysia, 23–25 November 2015, pp. 113-118, DOI: <https://doi.org/10.1109/MICC.2015.7725418>.
- [45] Ying Loong Lee, **Ayman A. El-Saleh**, Jonathan Loo and Ming Fei Siyau, “Performance Investigation on Binary Particle Swarm Optimization for Global Optimization,” *The 13th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS)*, Salamanca, Spain, 3–5 June 2015, *Lecture Notes in Computer Science*, Volume 9086, pp. 142-154,

DOI: https://doi.org/10.1007/978-3-319-18944-4_12

- [46] Wasan Kadhim Saada, Mahamod Ismail, Rosdiadee Nordin and **Ayman A. El-Saleh**, “Optimality of the HDC Rules in Cooperative Spectrum Sensing for Cognitive Radio Networks,” *1st International Conference on Telematics and Future Generation Networks (TAFGEN)*, Kuala Lumpur, Malaysia, 26–28 May 2015, pp. 22-27, DOI: <https://doi.org/10.1109/TAFGEN.2015.7289569>.
- [47] Mohammed A. Alrefaei, Tareq M. Shami and **Ayman A. El-Saleh**, “Genetic Algorithm with Multi-Parent Crossover for Cooperative Spectrum Sensing,” *2015 1st International Conference on Telematics and Future Generation Networks (TAFGEN)*, Kuala Lumpur, Malaysia, May 26–28 2015, pp. 17-21, DOI: <https://doi.org/10.1109/TAFGEN.2015.7289568>.
- [48] Tareq M. Shami, **Ayman A. El-Saleh** and Mohamad Y. Alias, “Spectrum Sharing Using Particle Swarm Optimization,” *1st International Conference on Telematics and Future Generation Networks (TAFGEN)*, Kuala Lumpur, Malaysia, 26–28 May, 2015, pp. 12-16, DOI: <https://doi.org/10.1109/TAFGEN.2015.7289567>.
- [49] Tareq M. Shami, **Ayman A. El-Saleh**, and Aymen M. Kareem, “On the Detection Performance of Cooperative Spectrum Sensing Using Particle Swarm Optimization Algorithms,” *2014 2nd IEEE International Symposium on Telecommunication Technologies (ISTT)*, Langkawi, Malaysia, 24–26 November 2014, pp. 110-114, DOI: <https://doi.org/10.1109/ISTT.2014.7238187>.
- [50] Wasan Kadhim Saad, Mahamod Ismail, Rosdiadee Nordin, Ayman A. El-Saleh, “Effect of work period of the primary user on spectrum sensing schemes based on MDE-dynamic energy detection,” *2014 2nd International Conference on Electronic Design (ICED)*, Penang, Malaysia, 19–21 August 2014, pp. 387-392, DOI: <https://doi.org/10.1109/ICED.2014.7015836>.
- [51] Israna Hossain Arka, Mahamod Ismail and **Ayman A. El-Saleh**, “Censored Cooperative Spectrum Sensing in Cognitive Radio Network,” *1st WSEAS International Conference on Wireless and Mobile Communication Systems (WMCS)*, Paris, France, 29–31 October 2013, pp. 112-118.
- [52] Israna Hossain Arka, Mahamod Ismail and **Ayman A. El-Saleh**, “Selective Weight Setting Algorithm in Cognitive Radio Network under Resource Limitation,” *2013 IEEE International Conference on Space Science and Communication (IconSpace)*, Malacca, Malaysia, 1–3 July 2013, pp. 313-317, DOI: <https://doi.org/10.1109/IconSpace.2013.6599487>.
- [53] **Ayman A. El-Saleh**, Mahamod Ismail, Mohsen Akbari, Mohsen Riahi Manesh, & Seyed Ahmad Rafiei Taba Zavareh, “Minimizing the Detection Error of Cognitive Radio Networks Using Particle Swarm Optimization,” *4th International Conference on Computer and Communication Engineering (ICCCE)*, Kuala Lumpur, Malaysia, 3–5 July 2012, pp. 877-881, DOI: <https://doi.org/10.1109/ICCCE.2012.6271342>.
- [54] Md. Kamal Hossain, **Ayman A. El-Saleh**, and Mahamod Ismail, “A Comparison Between Binary and Continuous Genetic Algorithm for Collaborative Spectrum Optimization in

Cognitive Radio Network,” *2011 9th IEEE Student Conference on Research and Development (SCORED)*, Cyberjaya, Malaysia, 19–20 December 2011, pp. 259-264, DOI: <https://doi.org/10.1109/SCORED.2011.6148747>.

- [55] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd Alauddin Mohd Ali, and Md. Kamal Hossain “Biologically-inspired Soft Fusion Scheme for Cooperative Spectrum Sensing in Cognitive Radio Networks,” *Proceedings of the 7th International Conference on Information Technology and Application (ICITA)*, Sydney, Australia, 21–24 November 2011, pp. 239-244.
- [56] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd Alauddin Mohd Ali, and Mandeep Singh, “Reliability-Resources Trade-offs in Cluster-Based Cooperative Spectrum Sensing,” *Proceeding of the 17th Asia-Pacific Conference on Communication (APCC)*, Kota Kinabalu, Sabah, Malaysia, 2–5 October 2011, pp. 360-365.
- [57] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd Alauddin Mohd Ali, M. R. Kamarudin, and T. A. Rahman, “Analytical Simulation and Performance Optimization for Spectrum Sensing in Cognitive Radio Networks,” *International Journal on Computer Science and Engineering (IJCSE)*, vol. 3, no. 2, pp. 554-568, February, 2011.
- [58] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd Alauddin Mohd Ali, M. R. Kamarudin, and T. A. Rahman, “Adaptive Optimization for Spectrum Sensing in Cognitive Radio Networks,” *Proceeding of the 2010 International Conference on Intelligent Network and Computing (ICINC)*, Kuala Lumpur, Malaysia, 26–28 November 2010, pp. 220-224.
- [59] **Ayman A. El-Saleh**, Mahamod Ismail, and Mohd Alauddin Mohd Ali, “Pragmatic Trellis Coded Modulation for Adaptive Multi-Objective Genetic Algorithm-Based Cognitive Radio Systems,” *16th Asia-Pacific Conference on Communication (APCC)*, Auckland, New Zealand, 31 October – 3 November 2010, pp. 429-434, DOI: <https://doi.org/10.1109/APCC.2010.5679986>.
- [60] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd. Alauddin Mohd. Ali, Jean Ng, “Development of a Cognitive Radio Decision Engine using Multi-Objective Hybrid Genetic Algorithm,” *2009 IEEE 9th Malaysia International Conference on Communications (MICC)*, Kuala Lumpur, Malaysia, 15–17 December 2009, pp. 343-347, DOI: <https://doi.org/10.1109/MICC.2009.5431527>.
- [61] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd. Alauddin Mohd. Ali, and Ibrahim Ismail Al-Kebisi, “Capacity Enhancement and Interference Reduction in Cooperative Cognitive Radio Networks,” *International Conference on Future Computer and Communication (ICFCC)*, Kuala Lumpur, Malaysia, April 3–5, 2009, pp. 145-149, DOI: <https://doi.org/10.1109/ICFCC.2009.80>.
- [62] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd. A. M. Ali, and Ahmed N. H. Alnuaimy, “Capacity Optimization for Local and Cooperative Spectrum Sensing in Cognitive Radio Networks,” *International Journal of Electronics and Communication Engineering*, vol. 3, no. 2, pp. 151-157, 2009.
- [63] Ibrahim Ismail Al-kebsi, Mahamod Ismail, Kasmiran Jumari, T. A. Rahman, and **Ayman A. El-Saleh**, “A Novel Algorithm with a New Adaptive Modulation Form to Improve the

Performance of OFDM for 4G Systems,” *International Conference on Future Computer and Communication (ICFCC)*, Kuala Lumpur, Malaysia, April 3–5, 2009, pp. 11-15, DOI: <https://doi.org/10.1109/ICFCC.2009.22>.

- [64] Ahmed N. H. Alnuaimy, Mahamod Ismail, Mohd. A. M. Ali, Kasmiran Jumari, and **Ayman A. El-Saleh**, “An Improved Algorithm for Channel Estimations of OFDM system based Pilot Signal,” *International Conference on Communication Technology (ICCT)*, Penang, Malaysia, February 25-27, 2009, Volume 38, pp. 66-68, DOI: <https://doi.org/10.5281/zenodo.1334648>
- [65] **Ayman A. El-Saleh**, Mahamod Ismail, Mohd. A. M. Ali, and Ahmed N. H. Alnuaimy, “Capacity Optimization for Local and Cooperative Spectrum Sensing in Cognitive Radio Networks,” *2009 International Conference on Communication Technology (ICCT)*, Penang, Malaysia, 25–27 February 2009, Volume 38, pp. 69-75, DOI: <https://doi.org/10.5281/zenodo.1063350>
- [66] **Ayman A. El-Saleh**, Mahamod Ismail, and Mohd. A. M. Ali, “Optimizing Spectrum Sensing Parameters for Local and Cooperative Cognitive Radios,” *11th International Conference on Advanced Communication Technology (ICACT)*, 15–18 February 2009, Phoenix Park, Gangwon, Korea (South), pp. 1810-1815. URL: <https://ieeexplore.ieee.org/document/4809426>
- [67] **Ayman A. El-Saleh**, Mahamod Ismail, Omar B. A. Ghafoor, and Anwar H. Ibrahim, “Comparison between Overlay Cognitive Radio and Underlay Cognitive Ultra Wideband Radio for Wireless Communications,” *5th IASTED International Conference on Communication Systems and Networks (AsiaCSN)*, Langkawi, Malaysia, 2–4 April 2008, pp. 41-45.

7.4 International Conferences [On Education / Teaching & Learning]

- [68] Khalid Abed Dahleez, **Ayman A. El-Saleh**, Abrar Mohammed AL Alawi and Fadi Abdel Fattah, “E-Learning System Usability and Learning Outcomes: The role of Teacher Behavior and Online Engagement,” *The Virtual 81st Annual Meeting of the Academy of Management (AOM)*, 29 July - 4 August 2021. DOI: <https://doi.org/10.5465/AMBPP.2021.12463abstract>

7.5 Books and Book Chapters:

7.5.1 Books

- (1) **Ayman A. El-Saleh**, Multi-Objective Evolutionary Algorithms for Cognitive Radio Networks: A Solution for Cooperative Spectrum Sensing, ISBN 978-3-639-51946-4, Scholar's Press, October 2013.

7.5.2 Book Chapters

- (1) Abdulaziz Alashbi, Abdul Hakim Mohamed, Ibraheem Shayea, **Ayman A. El-Saleh** and Abdul Ahad, “A Review of IoT Applications in Smart Environments: From Smart Cities to Military Integration,” *The International Conference of Reliable Information and Communication Technology (IRICT 2023)*, Published in Advances in Intelligent

Computing Techniques and Applications.. Lecture Notes on Data Engineering and Communications Technologies, Springer, vol. 211, pp. 176–190, May 2024.

DOI: https://doi.org/10.1007/978-3-031-59707-7_16

- (2) **Ayman A. El-Saleh**, Thaeer Thaher, Hamouda Chantar and Majdi Mafarja, “Enhanced IoT Based IDS Driven by Binary Snake Optimizer for Feature Selection,” *The 11th International Conference on Model and Data Engineering (MEDI 2022)*, Cairo, Egypt, 21-24 November 2022, *Advances in Model and Data Engineering in the Digitalization Era*, vol. 1751, pp 29–43, Communications in Computer and Information Science, Springer (978-3-031-23118-6), January 2023.

DOI: https://doi.org/10.1007/978-3-031-23119-3_3

- (3) Ying Loong Lee, **Ayman A. El-Saleh**, Jonathan Loo and Ming Fei Siyau, Performance Investigation on Binary Particle Swarm Optimization for Global Optimization, *Advances in Practical Applications of Agents, Multi-Agent Systems, and Sustainability*, Lecture Notes in Computer Science, Springer, pp. 142-154, May 2015.

https://doi.org/10.1007/978-3-319-18944-4_12

8. Research Profiles and Online Presence

<table border="1"> <tr> <th colspan="2">Google Scholar</th> </tr> <tr> <th colspan="2">Profile</th> </tr> <tr> <td colspan="2" style="text-align: center;"><u>Ayman A. El-Saleh</u></td> </tr> </table>		Google Scholar		Profile		<u>Ayman A. El-Saleh</u>							
Google Scholar													
Profile													
<u>Ayman A. El-Saleh</u>													
<table border="1"> <tr> <th colspan="2">Open Researcher and Contributor ID (ORCID)</th> </tr> <tr> <th>ORCID Name</th> <th>ORCID iD</th> </tr> <tr> <td>Ayman A. El-Saleh</td> <td>0000-0003-4754-9271</td> </tr> </table>	Open Researcher and Contributor ID (ORCID)		ORCID Name	ORCID iD	Ayman A. El-Saleh	0000-0003-4754-9271	<table border="1"> <tr> <th colspan="2">Web of Science (WoS)</th> </tr> <tr> <th>Name in WoS</th> <th>Researcher ID</th> </tr> <tr> <td>Ayman A. El-Saleh</td> <td>AAE-4221-2020</td> </tr> </table>	Web of Science (WoS)		Name in WoS	Researcher ID	Ayman A. El-Saleh	AAE-4221-2020
Open Researcher and Contributor ID (ORCID)													
ORCID Name	ORCID iD												
Ayman A. El-Saleh	0000-0003-4754-9271												
Web of Science (WoS)													
Name in WoS	Researcher ID												
Ayman A. El-Saleh	AAE-4221-2020												
<table border="1"> <tr> <th colspan="2">Scopus</th> </tr> <tr> <th>Scopus Author</th> <th>Scopus Author ID</th> </tr> <tr> <td>Ayman A. El-Saleh</td> <td>26430961800</td> </tr> </table>	Scopus		Scopus Author	Scopus Author ID	Ayman A. El-Saleh	26430961800	<table border="1"> <tr> <th colspan="2">ResearchGate</th> </tr> <tr> <th>Name</th> <th>h-index</th> </tr> <tr> <td>Ayman A. El-Saleh</td> <td>14</td> </tr> </table>	ResearchGate		Name	h-index	Ayman A. El-Saleh	14
Scopus													
Scopus Author	Scopus Author ID												
Ayman A. El-Saleh	26430961800												
ResearchGate													
Name	h-index												
Ayman A. El-Saleh	14												

9. RESEARCH FUNDING

Summary of Secured Grants:

Funding Source	As Principle Investigator or Project Leader		As Co-Principle Investigator, Co-Investigator, Project Member, or Faculty Mentor		Total	
	Number	USD	Number	USD	Number	USD
External Grants	6	227,650	9	127,900	15	355,550
Internal Grants	4	30,450	1	1,000	5	31,450
Total	10	258,100	10	128,900	20	387,000

9.1 External Grants

(Title, funding agency, project ID, funding amount, project duration, role, status)

- (1) Artificial Intelligence for Handover Management in 5G and 6G Cellular Networks: Towards Intelligence and Wireless Convergence of Future Networks, Call 2022, Research Grant (RG) Scheme of Block Funding Program (BFP), Ministry of Higher Education, Research and Innovation (MoHERI), BFP/RGP/ICT/22/485, OMR 20,000 (\approx USD 52,000), 01/01/2023-31/12/2024, **Principal Investigator**, ongoing.
- (2) Deep-Learning Face Detection Scheme for Highly Occluded Faces, Call 2022, Research Grant (RG) Scheme of Block Funding Program (BFP), Ministry of Higher Education, Research and Innovation (MoHERI), BFP/RGP/ICT/22/490, OMR 20,000 (\approx USD 52,000), 01/01/2023-31/12/2024, **Co-principal Investigator**, ongoing.
- (3) Quality Assessment of 4G/5G Mobile Service Providers in Selected Areas of Oman, Call 2022, Undergraduate Research Grant (URG) Scheme of Block Funding Program (BFP), Ministry of Higher Education, Research and Innovation (MoHERI), BFP/URG/ICT/22/184, OMR 1,500 (\approx USD 3,900), 01/01/2023-31/12/2023, **Faculty Mentor**, ongoing.
- (4) Internet of Things- (IoT-) empowered Smart System for Environmentally Controlled Growth of Algae in the Sultanate of Oman, Call 2022, Undergraduate Research Grant (URG) Scheme of Block Funding Program (BFP), Ministry of Higher Education, Research and Innovation (MoHERI), BFP/URG/EBR/22/240, OMR 1,500 (\approx USD 3,900), 01/01/2023-31/12/2023, **Faculty Mentor**, ongoing.
- (5) Digital Readiness and its Effects on Higher Education Students' Perceived Stress and Socio-Emotional Perceptions in the Context of the COVID-19 Pandemic, Call 2021, Graduate Research Grant (GRG) Scheme, the Block Funding Program (BFP), Ministry of Higher Education, Research and Innovation (MoHERI), Oman, BFP/GRG/EHR/21/096, OMR 3,000 (\approx USD 7,800), 01/12/2021 – 30/11/2022, **Project Member**, completed.
- (6) Licensed Spectrum Occupancy Analysis and Demand Forecasting for Current and Future Mobile Broadband Services in Oman, Call 2019, Research Grant (RG) Scheme of Block Funding Program (BFP), The Research Council (TRC), Oman, BFP/RGP/ICT/19/224, OMR 19,400 (\approx USD 50,450), 01/12/2019-30/05/2022, **Principal Investigator**, completed.

- (7) Green Internet of Things (IoT): Energy saving practices, impact on the environment, and its awareness in Oman, Call 2019, Research Grant (RG) Scheme of Block Funding Program (BFP), The Research Council (TRC), Oman, BFP/RGP/ICT/19/079, OMR 14,000 (\approx USD 36,400), 01/12/2019-30/05/2022, **Co-principal Investigator changed to Principal Investigator**, completed.
- (8) Development of a Smart Solar Tracking (STT) System as a Green Renewable Energy Solution, Call 2019, Undergraduate Research Grant (URG) Scheme of Block Funding Program (BFP), The Research Council (TRC), Oman, BFP/URG/EI/19/128, OMR 1,500 (\approx USD 3,900), 01/12/2019-30/11/2021, **Faculty Mentor**, completed.
- (9) Development of Green, Secure and Smart Home Automation System, Call 2019, Undergraduate Research Grant (URG) Scheme of Block Funding Program (BFP), The Research Council (TRC), Oman, BFP/URG/EI/19/127, OMR 1,500 (\approx USD 3,900), 01/12/2019-30/11/2021, **Faculty Mentor**, completed.
- (10) Developing and investigating an Effective Teaching and Learning Framework towards Realizing Smart Higher Education Institutes (HEIs) in Oman: A'Sharqiyah University Case Study, Call 2018, Research Grant (RG) Scheme of Block Funding Program (BFP), The Research Council (TRC), Oman, BFP/RGP/EHR/18/102, OMR 2,500 (\approx USD 6,500), 31/07/2019-30/01/2022, **Principal Investigator**, completed.
- (11) Detection Techniques for Massive MIMO Systems: Enabling Technology of 5G, Call 2018, Research Grant (RG) Scheme of Block Funding Program (BFP), The Research Council (TRC), Oman, BFP/RGP/ICT/18/079, OMR 2,500 (\approx USD 6,500), 31/07/2019-30/07/2021, **Co-principal Investigator**, completed.
- (12) Optimization of Cell Association and Load Balancing in Heterogeneous LTE-Advanced Cellular Networks, Telekom Malaysia Research and Development (TM R&D) Research Grant, Malaysia, MMUE/160065, RM 260,400 (\approx USD 64,000), 1/11/2016-31/10/2018, **Project Leader**, completed.
- (13) Practical Interference Alignment Techniques with Reduced CSI Dependency for 5G and Beyond Wireless Communications, Ministry of Education (MOE), Fundamental Research Grant Scheme (FRGS), Malaysia, FRGS/1/2015/ICT05/MMU/03/1, RM 80,700 (\approx USD 20,000), 1/11/2015-31/10/2017, **Project Member**, completed.
- (14) Enhanced Swarm Intelligence Algorithm for Highly-complex Real-time Optimization Problems, Ministry of Education (MOE), Fundamental Research Grant Scheme (FRGS), Malaysia, FRGS/2/2013/ICT02/MMU/02/1, RM 74,500 (\approx USD 18,300), 1/1/2014 – 31/12/2015, **Project Leader**, completed.
- (15) Time and Frequency Offset and Channel Estimation Algorithms for OFDM-based Vehicular Multi-Relay Networks, Ministry of Education (MOE), Fundamental Research Grant Scheme (FRGS), Malaysia, FRGS/1/2014/ICT02/MMU/03/1, RM 105,700 (\approx USD 26,000), 1/10/2014 – 31/9/2017, **Project Member**, completed.

9.2 Internal Grants

- (1) Machine and Deep Learning Technologies for Advanced Handover Self-Optimization and Load Balancing in 5G and B5G Cellular Networks, Internal Research Grant (IRG)

Program, OMR 5,000 (\approx USD 13,000), August 2023 – July 2025, **Principal Investigator**, ongoing.

- (2) Development of an Effective Teaching and Learning Framework for A'Sharqiyah University, University Seed Fund, OMR 1,000 (\approx USD 2,600), April 2020 – March 2022, **Principal Investigator**, ongoing.
- (3) Biologically-Inspired Optimization Schemes for Cognitive Femto-cellular LTE/LTE-Advanced Networks, MMU Graduate Research Assistant (GRA) Scheme, RM 55,200 (\approx USD 13,000), 4/1/2016-3/1/2018, **Project Leader**.
- (4) Development of Swarm Intelligence-based Optimization System for Multiple Real-time Applications, MMU Internal Mini Fund, RM 7,940 (\approx USD 1,850), 1/8/2012 - 31/12/2012, **Project Leader**, completed.
- (5) Channel and Time Offset Estimation for OFDM Based Relay Networks, MMU Internal Mini Fund, RM 4,200 (\approx USD 1,000), 1/7/2012 – 31/12/2012, **Project Member**, completed.

10. PROFESSIONAL ACTIVITIES

10.1 Given Workshops/Training Courses (Selected):

- **Workshop:** Submission of a Research Grant Proposal under the Block Funding Program: Procedure & Tips, ASU Staff Professional Development Plan 2021-2022, A'Sharqiyah University, February 2022.
- **Workshop:** The Block Research Funding Program, A'Sharqiyah University, March 2021.
- **Seminar:** Research Policies and Procedures, A'Sharqiyah University, September 2020.
- **Workshop:** Fundamentals of MATLAB Programming, 26 Feb 2011, UKM.
- **Workshop:** Introduction to MATLAB, Golden Key, Multimedia University (MMU), March 2009.

10.2 Technical Talks (Selected):

- (1) **Ayman A. El-Saleh**, "Multi-Objective Evolutionary Algorithms for Cooperative Spectrum Sensing in Cognitive Radio Networks," Research Seminar by Wireless Communications and Networks Group, 16 April 2012, Universiti Kebangsaan Malaysia (UKM), Bangi, Malaysia.
- (2) **Ayman A. El-Saleh**, "A Study on Soft and Hard Decision Fusion Schemes for Cluster-Based Cooperative Spectrum Sensing in Cognitive Radio Networks", MMU Engineering Research Colloquium and Exhibition 2011 (MERC2011), 08 June 2011, Multimedia University (MMU), Cyberjaya, Malaysia.
- (3) **Ayman A. El-Saleh**, "Optimization Strategies for Spectrum Sensing in Cognitive Radio Networks", MMU Engineering Research Colloquium 2010 (MERC2010), 12 January 2010, Multimedia University (MMU), Cyberjaya, Malaysia.

11. INTERNATIONAL RECOGNITION AND SERVICE TO COMMUNITY

11.1 Guest Editors

Dr. Abdulraheb Alhammadi, Universiti Teknologi Malaysia, Malaysia.

Dr. Ayman El-Saleh, A'Sharqiyah University (ASU), Oman.

Dr. Ibraheem Shayea, Istanbul Technical University (ITU), Turkey.

- Journal: Computers, Materials & Continua
- ISSN: 1546-2218 (print) - ISSN: 1546-2226 (online)
- Indexing: Science Citation Index Expanded (SCIE) by Clarivate Analytics
- 2020 Impact Factor: 3.772
- Special Issue: Artificial Intelligence and Adversarial Deep Learning in Wearable Indoor Localization
- Submission Deadline: 31 March 2022

11.2 Journal Paper Reviewer (Selected):

- *IEEE Transactions on Network and Service Management*, January 2020 – present.
- *IEEE Transactions on Wireless Communications*, January 2014 – present.
- *IEEE Transactions on Vehicular Technology*, December 2013 – present.
- *IEEE Communications Letters*, May 2012 – present.
- *IET Communications*, April 2015 – present.
- *Wireless Personal Communications*, April 2013 – present.
- *Transactions on Emerging Telecommunications Technologies (ETT)*, March 2013 – present.
- *KSII Transactions on Internet and Information Systems (TIIS)*, May 2012 – present.
- *Journal of Applied Research and Technology*, October 2014 – present.
- *International Journal of Engineering and Technology (IJET)*, 2011 – present (distinguished member).
- *International Journal of Computer and Electrical Engineering (IJCEE)*, 2011.
- *International Journal of Computer Theory and Engineering (IJCTE)*, 2009 – present.

11.3 Conference Paper Reviewer (Selected):

- 2015 IEEE 12th Malaysia International Conference on Communication (MICC 2015), 23-25 November 2015, Kuching, Sarawak, Malaysia.
- The 2015 IEEE Conference on Sustainable Utilization and Development in Engineering and Technology, 15-16 October 2015, Selangor, Malaysia.
- The 2014 IEEE Region 10 Symposium (2014 IEEE TENSYP), 14-16 April 2014, Kuala Lumpur Malaysia.
- The 11th International Multi-Conference on Systems, Signals and Devices, 11 - 14 February 2014, Castelldefels-Barcelona, Spain.
- 2013 IEEE 11th Malaysia International Conference on Communication (MICC 2013), 26-28 November 2013, Kuala Lumpur, Malaysia.
- 2013 IEEE International Conference on Circuits and Systems (ICCAS2013), 18th-19th September 2013, Kuala Lumpur, Malaysia.
- The 24th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2013), 8-11 September 2013, London, UK.

- The 2013 IEEE Conference on Sustainable Utilization and Development in Engineering and Technology (2013 IEEE CSUDET), 30 May - 1 June 2013, Cyberjaya, Malaysia.
- International Conference on Intelligent Systems and Signal Processing (ISSP 2013), 1st-2nd March, 2013, Gujarat, India.
- The 2012 IEEE International Conference on Circuits and Systems (ICCAS2012), 3rd October - 5th October 2012, Kuala Lumpur, Malaysia.
- The 23rd Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2012), 9 – 12 September 2012, Sydney, Australia.
- The the International Conference on Computer & Communication Engineering (ICCCE 2012), 3-5 July 2012, Kuala Lumpur, Malaysia.
- The 25th International Conference on Information Networking (ICOIN 2011), 1-3 February 2012, Bangkok, Thailand.
- The 17th Asia-Pacific Conference on Communications (APCC-2011), 2-5 October 2011, Kota Kinabalu, Sabah, Malaysia.
- The 2011 IEEE 73rd Vehicular Technology Conference (VTC2011-Spring), 15–18 May 2011, Budapest, Hungary.
- The 2011 IEEE Symposium on Computers & Informatics (ISCI 2011), 20-22 March 2011, Kuala Lumpur, Malaysia.
- The 25th International Conference on Information Networking (ICOIN 2011), 26-28 January 2011, Malaysia.
- The 11th IEEE Asia Pacific Conference on Circuits and Systems (APCCAS 2010), 06-09 December 2010, Malaysia.
- The 2nd International Conference on Network Applications, Protocols and Services (NETAPPS2010), 22-23 September 2010, Malaysia.
- The Asia Symposium on Quality Electronic Design (ASQED 2010), 19-20 July 2010, Malaysia.
- The Malaysia IEEE Conference on Communications (MICC 2009), 14-17 December 2009, Malaysia.
- The International Conference on Computer and Communication Engineering (ICCCE08), 13-15 May 2008, Malaysia.

11.4 Technical Program Committee (TPC) Member (Selected):

- The 3rd International Symposium on Telecommunication Technologies (ISTT2016), 28-30 November 2016, Kuala Lumpur, Malaysia.
- The 24th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2013), 8-11 September 2013, London, UK.
PIMRC2012-PHY (PIMRC2012-Track 1: PHY and Fundamentals)
PIMRC2012-MAC (PIMRC2012-Track 2: MAC and Cross-Layer Design)
- The 23rd Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2012), 9 – 12 September 2012, Sydney, Australia.
PIMRC2012-PHY (PIMRC2012-Track 1: PHY and Fundamentals)
PIMRC2012-MAC (PIMRC2012-Track 2: MAC and Cross-Layer Design)
- The 26th International Conference on Information Networking (ICOIN 2011), 1-3 February 2012, Bangkok, Thailand.
- The 25th International Conference on Information Networking (ICOIN 2011), 26-28 January 2011, Malaysia.

11.5 Internal Examiner (within my Institute):

- (1) Student: Mah Meng Chuan
Supervisor: Dr. Lim Heng Siong
Program: M.Eng.Sc. (by research)
Faculty/University: Faculty of Engineering Technology (FET)
/Multimedia University (MMU)
Title: Improved Mobile Radio Network Dimensioning
Methodology with QoS Considerations
Appointment Date: 27 September 2013
- (2) Student: Ng Thiaw Seng
Supervisor: Dr. Chuah Teong Chee
Co-Supervisor: Dr. Tan Yi Fei
Program: Ph.D. (by research)
Faculty/University: Faculty of engineering/Multimedia University
(MMU)
Title: Improved Mobile Radio Network Dimensioning
Methodology with QoS Considerations
Appointment Date: 25 March 2013
- (3) Student: Abdelkarim Farag Gad
Supervisor: Prof. Muhammed Yusoff Alias
Program: M.Eng. (by coursework)
Faculty/University: Faculty of Engineering (FOE)
/Multimedia University (MMU)
Title: Handover Management in Femtocell Networks
Appointment Date: 28 January 2015

11.6 External Examiner (in other Institutes):

- (1) Student: Miad Mohamed Habib Al Balushi
Supervisor: Dr. Naser Altrhuni
Program: Master of Science in Electrical and Computer Engineering
Faculty/University: Sultan Qaboos University, Oman
Title: Non-Orthogonal Multiple Access for Visible Light
Communication
Date: 02 September 2021
- (2) Student: Nawal Al Aamri
Supervisor: DR. Zia Nadir
Program: Master of Science in Communications and Signal Processing
Faculty/University: Sultan Qaboos University, Oman
Title: Characterization of Path Loss Propagation Models in Wireless
Communications at 4G/5G and Effects of SAR on Human Brain
Date: 08 April 2021
- (3) Student: Musaab Sami Ismail
Supervisor: Dr. Noor Shamsiah Othman
Program: Master of Electrical Engineering (Structure B)

Faculty/University: College of Engineering/Universiti Tenaga Nasional (UNITEN),
Malaysia
Title: Performance of Two-Hop Cooperative Coding Using
Convolutional Code
Date: 1 March 2013

- (4) Student: Ahmed Mohammed Ahmed
Supervisor: Dr. Noor Shamsiah Othman
Program: Master of Electrical Engineering (Structure B)
Faculty/University: College of Engineering/Universiti Tenaga Nasional (UNITEN),
Malaysia
Title: Comparative Investigation of DFT-And DCT Based Over-
Complete Expansion for Error Protection Of Wireless
Transceiver
Date: 1 March 2013

11.7 Expert in Proposal Defense Seminar (PDS) – Selected Duties only

- (1) Student: Siva Priya Thiagrajah
Supervisor: Dr. Muhamad Yusoff Alias
Co. Supervisor: Dr. Tan Su Wei
Program: Ph.D.
Faculty/University: Faculty of engineering / Multimedia University (MMU)
Title: Coverage and Capacity Optimization for 4G Heterogeneous
Multi-Hop Broadband Wireless Networks.
Date: 17 October 2013

11.8 Expert in Work Completion Seminar (WCS) – Selected Duties only

- (1) Student: Wee Kuok Kwee
Supervisor: Dr. Mardeni Roslee
Co-Supervisor: Dr. Tan Su Wei
Program: Ph.D.
Faculty/University: Faculty of Engineering/Multimedia University (MMU)
Title: Quality of Service in High Speed 802.16 Wireless Broadband
Networks
Date: 31 December 2012
- (2) Student: Ng Thiaw Seng
Supervisor: Dr. Chuah Teong Chee
Co-Supervisor: Dr. Tan Yi Fei
Program: Ph.D.
Faculty/University: Faculty of engineering/Multimedia University (MMU)
Title: Improved Mobile Radio Network Dimensioning Methodology
with QoS Considerations
Date: 3 December 2012
- (3) Student: Tang Sze Yin
Supervisor: Dr. Chang Yoong Choon

Program: M.Eng.Sc. (By Research)
Faculty/University: Faculty of Engineering/Multimedia University (MMU)
Title: Traffic Scheduling for QoS Provisioning in Broadband Wireless Access Network
Date: 11 January 2010

- (4) Student: Mohd Faizal Khalek
Supervisor: Dr. Zubaida Yusoff
Program: M.Eng.Sc. (By Research)
Faculty/University: Faculty of engineering/Multimedia University (MMU)
Title: Low Power Circuit Design Techniques on Clock Data Recovery Applications
Date: 8 April 2008

11.9 Memberships of International Bodies:

- **SMIEEE:** Senior Member of Institute of Electrical and Electronics Engineers (IEEE), USA.
Membership number: 90555013
Membership Duration: February 2017 – present
- **MIET:** Member of IET (The Institution of Engineering and Technology), UK.
Membership number: 1100280171
Membership Duration: February 2013 – 2017
- **MICICE:** Member of IEICE (The Institute of Electronics, Information and Communication Engineers), Japan.
Membership number: 0986925
Membership Duration: April 2010 – 2017
- **MIACSIT:** Member of IACSIT (The International Association of Computer Science and Information Technology), Singapore.
Membership number: 80331549
Membership Duration: July 2009 – 2017

11.10 International/National Recognition:

- Member of Executive Committee (ExCom) of Joint IEEE Communications Society and Vehicular Technology Society (ComSoc/VTS), Malaysia Chapter (Secretary), 2016.
- Member of Executive Committee (ExCom) of Joint IEEE Communications Society and Vehicular Technology Society (ComSoc/VTS), Malaysia Chapter (Awards, Branding and Recognition), 2015.

11.11 Awards:

11.11.1 Individual Awards:

- **Best Researcher Award** (Researcher of the Year)
A'Sharqiyah University, Sultanate of Oman, June 2024.
- **Best Journal Paper Award** (Engineering Track)
The University Research Day 2024, A'Sharqiyah University, Sultanate of Oman, May 2024.
- **Best Researcher Award** (Researcher of the Year)
A'Sharqiyah University, Sultanate of Oman, June 2022.
- **Best Conference Paper Award**
For the paper entitled "Trade-Off Performances in Multiuser MIMO Networks with Quantized CSI Feedback," *The 2020 IEEE 5th International Symposium on Telecommunication Technologies (ISTT)*, pp. 145-150, Shah Alam, Malaysia, 9–11 November 2020.
- **Best Journal Paper Award**
The 2nd IEEE Oman Section Annual Gathering, held on 15 December 2020, for the paper entitled "User Association for Backhaul Load Balancing with Quality of Service Provisioning for Heterogeneous Networks," *IEEE Communications Letters*, vol. 22, no. 11, pp. 2338-2341.
- **Highly Cited Researcher Award**
A'Sharqiyah University, Oman, March 2020.
- **Best Teacher Award** (Teacher of the Year)
A'Sharqiyah University, Sultanate of Oman, April 2019.
- **Best Journal Paper Award** (Engineering Track)
The University Research Day 2019, A'Sharqiyah University, Sultanate of Oman, March 2019.

11.11.2 Group Awards:

- 2016 IEEE Communication Society Chapter of the Year Award (IEEE Global)
Reference: <https://www.comsoc.org/membership/chapters/chapter-awards>
- 2016 IEEE Communication Society Chapter Achievement Award (IEEE Asia Pacific)
Reference:
<https://gcn.comsoc.org/blaze-glory-ieee-communications-society-and-vehicular-technology-society-malaysia-joint-chapter>
- 2015 IEEE Vehicular Technology Society Chapter of the Year Award (IEEE Global)
Reference:
<https://gcn.comsoc.org/blaze-glory-ieee-communications-society-and-vehicular-technology-society-malaysia-joint-chapter>

12. REFERENCES

Name : Prof. Dr. Yahya Al Wahaibi
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Position : Head of Electronics and Communication Engineering Department
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Name : Prof. Dr. Sam Wamuziri
Position : Director of Engineering, Muscat University (ASU), Oman
Position : ex Dean of College of Engineering, A'Sharqiyah University (ASU), Oman
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Email : sam.wamuziri@yahoo.com

Name : Prof. Dr. Chuah Teong Chee
Position : Professor & Coordinator of Telecommunication Engineering Program
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Telephone : + 6083125352
Email : tcchuah@mmu.edu.my

Name : Prof. Dr. Wong Hin Yong
Position : Dean of Institute for Postgraduate Studies & Ex Dean of Faculty of Engineering
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Email : yusoff@mmu.edu.my

Last update: 26 June 2024