

# OTHMAN OMRAN KHALIFA



- KULLIYAH OF ENGINEERING
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## المؤهل العلمي

- Doctor of Philosophy in Electrical and Electronics Engineering
- Master of Science in Electronics Engineering
- Bachelor of Science in Electronic Engineering

## مسؤوليات التدريس

COMMUNICATION ENGINEERING LAB II	2018/2019
COMMUNICATION ENGINEERING LAB IV	2008/2009
COMMUNICATION PRINCIPLES	2003/2004 2004/2005
COMMUNICATION PRINCIPLES (LAB)	2003/2004
COMMUNICATIONS LAB	2002/2003 2006/2007
COMPUTER GRAPHICS	2005/2006
COMPUTER VISION AND IMAGE PROCESSING	2003/2004 2004/2005 2005/2006 2006/2007 2008/2009 2010/2011 2011/2012 2012/2013 2013/2014 2015/2016 2016/2017 2017/2018
Communications Engineering Lab II	2018/2019 2019/2020 2020/2021
DIGITAL COMMUNICATION	2018/2019
DIGITAL COMMUNICATIONS	2002/2003 2016/2017
DIGITAL LOGIC DESIGN	2002/2003
DIGITAL LOGIC DESIGN (LAB)	2002/2003
DIGITAL SIGNAL PROCESSING	2002/2003 2003/2004 2004/2005 2005/2006 2006/2007 2007/2008 2008/2009 2009/2010 2010/2011 2011/2012 2012/2013 2013/2014 2014/2015 2015/2016 2016/2017 2017/2018 2018/2019 2019/2020 2020/2021
DIGITAL SIGNAL PROCESSING (LAB)	2003/2004
Digital Communication Systems Design	2018/2019 2019/2020 2020/2021
FINAL YEAR PROJECT 1	2019/2020 2020/2021

FINAL YEAR PROJECT I	2019/2020
Final Year Project I	2018/2019
Final Year Project II	2018/2019
IMAGE PROCESSING	2008/2009 2009/2010
INFORMATION THEORY AND CODING	2003/2004 2004/2005 2005/2006 2006/2007 2007/2008 2008/2009 2009/2010 2010/2011 2011/2012 2015/2016 2016/2017
INFORMATION THEORY AND CODING (LAB)	2003/2004
INFORMATION, THEORY AND CODING	2016/2017 2017/2018 2018/2019 2019/2020 2020/2021
PROJECT II	2018/2019
SEMINAR	2006/2007
SIGNALS AND SYSTEMS	2008/2009
SPEECH AND IMAGE PROCESSING	2003/2004 2004/2005

## المشاريع البحثية

### In Progress

- 2019 - Present** - Artificial Intelligence aided algorithm to improve the detection of severity of curve in scoliotic spine
- 2018 - Present** - An investigation of low cost and energy efficient 3D hybrid beamforming technique of 3D antenna array for 5G standards
- 2018 - Present** - Development of Continuous-time Non-invasive Glucose Sensing System
- 2016 - Present** - Training Teachers from Sudanese International Schools
- 2016 - Present** - Reduced-reference Metric Video Quality Metric using Spatial Information in Salient Regions
- 2015 - Present** - Analysis and Evaluation of Quality of Service Support Requirements in Mobile Network Environment
- 2009 - Present** - VSLI and MEMS Research Unit
- 2009 - Present** - VSLI and System Design Research Unit

### Completed

- 2016 - 2019** Reduced-reference Metric Video Quality Metric using Spatial Information in Salient Regions
- 2016 - 2018** Multihoming-Based Scheme to Support Mobility Management in NEMO
- 2015 - 2018** Database-Aided Energy Detection Spectrum Sensing To Enhance Cognitive Radio Spectrum Utilization Of RADAR Frequency Bands
- 2015 - 2018** Analysis and Evaluation of Quality of Service Support Requirements in Mobile Network Environment
- 2013 - 2015** Medical Identity Theft in Telemedicine: Solving the Privacy and Security Issues
- 2013 - 2016** Hierarchical Horizontally Cross-tiered Scheduling for Downlink in LTE-Advanced Mobile Telecommunication System
- 2013 - 2015** Optimised Multicast Support for Mobile Sender in Wireless Mesh Networks
- 2012 - 2015** Proof of Concept for a Novel Real Time, Hardware base Cancer Chemotherapeutics Kit Using MEMS Biosensor
- 2012 - 2015** Analytical evaluation of inter domain movement in NEMO environment
- 2012 - 2013** Brain tumor data collection and analysis for developing tumor growth model
- 2012 - 2015** Hardware Implementation of a Novel Impedance Spectroscopy System for Cancer Cell Studies
- 2012 - 2015** Handheld to Facilitate Development of an Effective Multi-Targets Monitoring and Tracking (MTTM) Model
- 2011 - 2012** Enhancement of Context Transfer in Mobile Multicast
- 2011 - 2013** Hardware Prototyping of Photoplethysmography Based Cardiac Monitoring Technique for Devising a Practical Remote Health Monitor
- 2011 - 2016** Distortion- Free Digital Watermaking For Medical Images (Fundus) Using Complex-Valued Neural Network
- 2011 - 2011** Design And Development Of RFID Tag Antenna For The Use Of Metallic Item
- 2011 - 2014** RU 2011: Measurement and Prediction of Crosspolarization Statistics Due to Tropical Rainfall at Future Generation Satellite Bands
- 2011 - 2011** An Investigation of Image Guided Surgery (IGS) Computational Effectiveness Based on Clinical Evaluation
- 2011 - 2012** RU 2011: Design and Evaluation of Network Mobility Protocol to Achieve Seamless Handoff
- 2010 - 2012** Context transfer based handoff in MPLS Domain
- 2010 - 2011** Development of a Path Loss Model for Mobile Communications in Malaysia
- 2010 - 2013** Novel Algorithms on Speech and Audio Coding Based on Compressive Sensing Principle

- 2010 - 2011** TDMA Protocol for Wireless Vehicular Communication
- 2010 - 2011** RFID for Haji Visitors Identification Guide Information and Personal Announcement
- 2010 - 2012** Design and Implementation of a Smart Mobile Phone Jammer
- 2010 - 2011** An Enhanced Network Mobility Protocol to Achieve Seamless Handoff
- 2010 - 2011** Interference Analysis in OFDMA-Femtocell Systems
- 2010 - 2012** Position-based quality of service (QoS) multicast Routing Protocol for Mobile Ad-Hoc Networks
- 2009 - 2009** Quality of Service Challenges in Mobile Environment
- 2009 - -1** Investigation of the Performance of the Existing Propagation Path Loss Models for Mobile Communication in Malaysia
- 2009 - 2011** Design and Stimulation of Adaptive Beamforming Algorithm and Linear Array Antenna for Smart Antenna System
- 2009 - 2011** Development of an Efficient Portable Algorithm for the Grid Environment
- 2009 - 2012** Development of an Emergency Medical Care System for Cardiac Telemedicine Monitoring
- 2008 - 2011** Developing an Efficient Approach for Handwritten Arabic Word Recognition
- 2008 - 2016** Vision-based Road Detection for Autonomous Intelligent Vehicles
- 2008 - 2010** Wireless Data Acquisition for Monitoring of Civil Structures with Embedded Sensors - Experimental Results
- 2008 - 2009** Gesture Recognition Using Muscle Signals for Human Computer Interaction
- 2008 - 2011** Development of a Robust and Scalable Routing Protocol for Wireless Mesh Networks.
- 2007 - 2009** Vision-Based Road Detection for Autonomous Intelligent Vehicle
- 2007 - 2012** A New Modeling Technique for The Real Time Analysis of Multicomponent Transient Signals.
- 2006 - 2011** Development of Finite Field Polynomial Representation for Encoding and Decoding Operations of Low Density Parity Check Codes

## المنشورات

### Article

- 2020** [Evaluating signalling and packet delivery cost for NDN producer's mobility in smart & sustainable environment.](#) Journal of Advanced Research in Dynamical and Control Systems , 12 (6) pp.1604-1614

- 2020** [Service redundancy and cluster-based routing protocols for wireless sensor and mobile ad hoc networks: a survey.](#) International Journal of Communication Systems , 33 (16) pp.1-27
- 2020** [Performance analysis of constrained device virtualization algorithm.](#) International Journal of Innovative Technology and Exploring Engineering (IJITEE) , 9 (5) pp.532-539
- 2020** [Design and evaluation of a multihoming-based mobility management scheme to support inter technology handoff in PNEMO.](#) Wireless Personal Communications , Online First pp.1-21
- 2020** [Simulation of handoff algorithm for NDN producer's mobility.](#) Journal of Advanced Research in Dynamical and Control Systems , 12 (2) pp.2242-2251
- 2020** [Emotion speech recognition using deep learning.](#) Majlesi Journal of Electrical Engineering , 14 (4) pp.39-55
- 2020** [Performance evaluation of AODV ,OLSR, and GRP for transmitting video conferencing over MANETs.](#) International Journal of Computer Science and Information Security (IJCSIS) , 18 (4) pp.45-51
- 2019** [Improved voice quality with the combination of transport layer & audio codec for wireless devices.](#) Bulletin of Electrical Engineering and Informatics , 8 (2) pp.667-675
- 2019** [Principal component analysis for human gait recognition system.](#) Bulletin of Electrical Engineering and Informatics , 8 (2) pp.571-578
- 2019** [Throughput analysis for the mobility of a consumer and an anchorless producer in NDN.](#) Journal of Advanced Research in Dynamical and Control Systems , 11 (1) pp.189-196
- 2019** [براءات الاختراع في الوطن العربي \(the status of patents in the Arab World: an evaluation introductory\).](#) مجلة المستقبل العربي (Arab Future) , 41 (481) pp.28-45
- 2019** [Performance analysis of LDPC channel coding in 4G systems.](#) International Journal of Recent Technology and Engineering (IJRTE) , 8 (1) pp.1667-1670
- 2019** [Video streaming over Ad hoc on-demand distance vector routing protocol.](#) Bulletin of Electrical Engineering and Informatics , 8 (3) pp.863-874
- 2019** [Efficient 3D stereo vision stabilization for multi-camera viewpoints.](#) Bulletin of Electrical Engineering and Informatics , 8 (3) pp.882-889
- 2019** [Performance evaluation of best route and broadcast strategy for NDN producer's mobility.](#) International Journal of Engineering and Advanced Technology (IJEAT) , 9 (1) pp.3671-3677
- 2019** [Analytical modelling of premises-specific solar energy estimation.](#) International Journal of Recent Technology and Engineering (IJRTE) , 8 (5) pp.10971-10974
- 2019** [Evaluating mobility management models for content forwarding in named data networking environments.](#) International Journal of Interactive Mobile Technologies (ijIM) , 13 (4) pp.47-60

- 2019** [Neuroscience-inspired artificial vision feature parallelism and deep learning models, a comparative study ii depth.](#) Journal of Asian Scientific Research , 9 (9) pp.127-139
- 2018** [Reduced-reference video quality metric using spatial Information in salient regions.](#) TELKOMNIKA , 16 (3) pp.965-973
- 2018** [Data in transit validation for cloud computing using cloud-based algorithm detection of injected objects.](#) Indonesian Journal of Electrical Engineering and Computer Science , 10 (1) pp.348-353
- 2018** [Beam steering using the active element pattern of antenna array.](#) TELKOMNIKA: Telecommunication Computing Electronics and Control , 16 (4) pp.1542-1550
- 2018** [Developing a robust framework to reduce the size of a recorded video surveillance systems.](#) International Journal of Future Generation Communication and Networking , 11 (1) pp.37-46
- 2018** [Fuzzy logic based edge detection method for image processing.](#) International Journal of Electrical and Computer Engineering , 8 (3) pp.1863-1869
- 2018** [Beam steering using the active element pattern of antenna array.](#) TELKOMNIKA: Telecommunication Computing Electronics and Control , 16 (4) pp.1542-1550
- 2018** [Robust vision-based multiple moving object detection and tracking from video sequences.](#) Indonesian Journal of Electrical Engineering and Computer Science , 10 (2) pp.817-826
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- 2018** [Measuring the road traffic intensity using neural network with computer vision.](#) Indonesian Journal of Electrical Engineering and Computer Science , 10 (1) pp.184-190
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- 2017** [Development of gateway discovery and selection scheme for MANEMO \(MGDSS\).](#) International Journal of Future Generation Communication and Networking , 10 (3) pp.81-90
- 2017** [The effect of network's size on the performance of the gGateway discovery and selection scheme for MANEMO.](#) Indonesian Journal of Electrical Engineering and Informatics (IJEEI) , 5 (4) pp.351-356

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- 2017** [Integrating entrepreneurship into engineering education.](#) International Journal of u- and e- Service, Science and Technology , 10 (2) pp.45-52
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- 2016** [Speech enhancement based on wiener filter and compressive sensing.](#) Indonesian Journal of Electrical Engineering and Computer Science , 2 (2) pp.367-379
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- 2016** [Joint channel assignment and routing in multiradio multichannel wireless mesh networks: Design considerations and approaches.](#) Journal of Computer Networks and Communications , 2016 pp.1-24
- 2016** [Moving object detection and tracking in video surveillance system.](#) Journal of Scientific and Engineering Research , 3 (6) pp.426-432
- 2016** [Review of SIP based DoS attacks.](#) International Journal of Computer Applications Technology and Research , 5 (12) pp.775-781
- 2016** [Streaming video based on temporal frame transcoding.](#) International Journal of Innovative Science, Engineering & Technology , 3 (7) pp.672-677
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- 2016** [تحويل النص العربي إلى كلام منطوق بناء على تقنية التركيب المختلط.](#) Communications of the Arab Computer Society , 9 (1) pp.1-13
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- 2015** [Video transmission over an enhancement approach of IEEE802.11e.](#) International Journal of Computer Applications Technology and Research , 4 (5) pp.343-350
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- 2013** [A novel approach to tumor quantification and graphical model for image guided surgery.](#) Scottish Journal of Arts, Social Sciences and Scientific Studies , 12 (1) pp.3-15
- 2013** [Design and optimization of Levenberg-Marquardt based Neural Network Classifier for EMG signals to identify hand motions.](#) Measurement Science Review , 13 (3) pp.142-151
- 2013** [Speech enhancement based on compressive sensing algorithm.](#) IOP Conference Series: Materials Science and Engineering Email alert RSS feed , 53 pp.012076
- 2013** [Design and performance analysis of artificial neural network for hand motion detection from EMG signals.](#) World Applied Sciences Journal , 23 (6) pp.751-758
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- 2013** [Analytical evaluation of a new route optimization scheme for nested mobile network.](#) World Applied Sciences Journal (21) pp.16-20
- 2013** [An enhanced macro mobility management scheme in NEMO environment to achieve seamless handoff.](#) World Applied Sciences Journal (21) pp.35-39
- 2012** [Increasing the hiding capacity of low-bit encoding audio steganography using a novel embedding technique.](#) World Applied Sciences Journal (20) pp.79-83
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- 2012** [Analytical evaluation of a new route optimization scheme for nested mobile network](#). World Applied Sciences Journal pp.16-20
- 2012** [An enhanced macro mobility management scheme in NEMO environment to achieve seamless handoff](#). World Applied Sciences Journal , 20 pp.35-39
- 2011** [Phonetically rich and balanced text and speech corpora for Arabic language](#). Language Resources and Evaluation pp.1-34
- 2011** [Investigation of route optimization for mobile ad hoc NEMO \(MANEMO\) based proposals](#). Australian Journal of Basic and Applied Sciences , 5 (6) pp.814-838
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- 2011** [Geographical Multicast Quality of Service Routing Protocol for Mobile Ad-Hoc Networks](#). Engineering Letters , 18 (3) pp.212-225
- 2011** [Vision based road lane detection system for vehicles guidance](#). Australian Journal of Basic and Applied Sciences , 5 (5) pp.728-738
- 2011** [Mathematical evaluation of a context transfer-based approach to improve handover in mobile multicast environment](#). Australian Journal of Basic and Applied Sciences , 5 (2) pp.165-172
- 2011** [A cluster-based QoS multicast routing protocol for scalable MANETs](#). KSII Transactions on Internet and Information Systems , 5 (4) pp.741-762
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- 2011** [Power control for interference avoidance in femtocell network.](#) Australian Journal of Basic and Applied Sciences , 5 (6) pp.416-422
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- 2011** [Ethical issues in monitoring and based tracking systems.](#) IIUM Engineering Journal , Spcial (Scienc)
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- 2011** [Mobility management schemes in NEMO to achieve seamless handoff: a qualitative and quantitative analysis .](#) Australian Journal of Basic and Applied Sciences , 5 (6) pp.390-402
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- 2010** [Damageless digital watermarking using complex-valued artificial neural network .](#) Journal of Information and Communication Technology , 9 pp.111-137
- 2010** [Advances in electromyogram signal classification to improve the quality of life for the disabled and aged people.](#) Journal of Computer Science , 6 (7) pp.705-715
- 2010** [Suitability of using symmetric key to secure multimedia data: an overview.,.](#) Journal of Applied Sciences , 10 (15) pp.1665-1661
- 2010** [Performance evaluation of MPEG-4 video transmission over IEEE802.11e.](#) International Journal of Computer and Network Security(IJCSNS) , 2 (5) pp.11-15
- 2010** [RD-Optimisation analysis for H.264/AVC scalable video coding.](#) International Journal of Computer and Network Security (IJCNS) , 2 (4) pp.1-5

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- 2010** [Engineering curriculum design and development.](#) Australian Journal of Islamic Studies , 2 (1) pp.7-26
- 2010** [Fade margin analysis due to duststorm based on visibility data measured in a desert.](#) American Journal of Applied Sciences , 7 (4) pp.551-555
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- 2009** [Independent component analysis for fetal heart rate detection using photosplethysmography.](#) International Journal of Information Analysis and Processing , 2 (1) pp.1-6
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- 2009** [New approach of hidden data in the portable executable file without change the size of carrier file using statistical technique.](#) International Journal of Computer Science and Network Security (IJCSNS) , 9 (7) pp.218-224
- 2008** [An efficient emergency, healthcare, and medical information system.](#) International Journals of Biometric and Bioinformatics (IJBB) , 2 (5) pp.1-9
- 2008** [Rule-based fuzzy logic controller with adaptable reference.](#) International Journal of Electrical and Computer Engineering , 3 (1) pp.7-11
- 2008** [Capacitive transducer circuits for liquid level measurement.](#) International Journal of Computer Sciences and Engineering Systems , 2 (3) pp.195-197
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- 2008** [Toward Efficient Low Cost Highly Accurate Emotion Speech Synthesizer..](#) International Journal of Computer Science and Network Security (IJCSNS) , 8 (9) pp.316-320
- 2008** [Compression using Wavelet Transform.](#) International Journal of Signal Processing , 2 (5) pp.17-26
- 2008** [Adaptive Emotional Personality Model based on Fuzzy Logic Interpretation of Five Factor Theory.](#) International Journal of Signal Processing , 2 (4) pp.1-9
- 2008** [Review of multicast QoS routing protocols for mobile ad hoc networks.](#) International Journal of Computer Science and Network Security (IJCSNS) , 8 (12) pp.108-117
- 2007** [Malaysian vehicle license plate recognition.](#) The International Arab Journal of Information Technology , 4 (4) pp.359-364
- 2007** [SMaTTS: standard malay text to speech system.](#) International Journal of Electrical and Computer Engineering , 4 (2) pp.285-293
- 2007** [A high accuracy measurement circuit for soil moisture detection.](#) World Academy of Science, Engineering and Technology , 1 (11) pp.947-950
- 2007** [PDA mobile learning using indoor intelligent wireless whiteboard.](#) Turkish Online Journal of Distance Education-TOJDE , 8 (2) pp.9-13
- 2006** [Radiation measurement from mobile base stations at a university campus in Malaysia.](#) American Journal of Applied Sciences , 3 (4) pp.1781-1784
- 2006** [Image processing for chatter identification in machining processes.](#) International Journal of Advanced Manufacturing Technology , 31 pp.443-449
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- 2020 [Traffic congestion detection for smart and control transportation management.](#) In: **The 12th National Technical Seminar on Unmanned System Technology 2020 (NUSYS'20)**
- 2020 [Video-based abnormal behaviour detection in smart surveillance systems.](#) In: **The 12th National Technical Seminar on Unmanned System Technology 2020 (NUSYS'20)**
- 2020 [Computer vision based driver assistance drowsiness detection.](#) In: **The 12th National Technical Seminar on Unmanned System Technology 2020 (NUSYS'20)**
- 2020 [Wireless devices positioning techniques based on signal strength.](#) In: **The 1st International Recent Trends in Technology, Engineering and Computing Conference 2020 (IRTTEC 2020)**
- 2020 [Plagiarism detection of images.](#) In: **2020 IEEE Student Conference On Research and Development (SCOREd)**
- 2020 [Deep learning for emotional speech recognition.](#) In: **7th International Conference on Electronic Devices, Systems and Applications (ICEDSA2020)**
- 2020 [Video based human activities recognition using deep learning.](#) In: **7th International Conference on Electronic Devices, Systems and Applications (ICEDSA2020)**
- 2020 [Wireless power transfer for electric vehicle charging.](#) In: **7th International Conference on Electronic Devices, Systems and Applications (ICEDSA2020)**
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- 2015 [Real-Time personalized stress detection from physiological signals.](#) In: **International Conference on Computing, Control, Networking, Electronics and Embedded Systems Engineering (ICCNEEE'15)**
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- 2012 [Online tutoring system in college: Case study in private education.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**

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- 2012 [Spatial sectoring: A innovative extension of Simpson's rule for determining area of irregular close shape.](#) In: **IJUM Research, Invention and Innovation Exhibition, IRIIE 2012**
- 2012 [Dust-storm induced cross-polarization at MMW bands in Northern Nigeria.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**
- 2012 [Development of VHDL model for fixed-point discrete wavelet transform.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**
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- 2012 [A step towards the development of VHDL model for ANN based EMG signal classifier.](#) In: **IEEE/OSA/IAPR International Conference on Informatics, Electronics & Vision**
- 2012 [Perceptual model-based information hiding in audio signals.](#) In: **2nd International Conference on Mathematical Applications in Engineering (ICMAE2012)**
- 2012 [The use of artificial neural network in the classification of EMG signals.](#) In: **The 3rd FTRA International Conference on Mobile, Ubiquitous, and Intelligent Computing (MUSIC '12)**
- 2012 [Statistical modeling for speech recognition.](#) In: **2nd International Conference on Mathematical Applications in Engineering (ICMAE2012)**
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- 2012 [EMG motion pattern classification through design and optimization of neural network.](#) In: **2012 International Conference on Biomedical Engineering (ICoBE)**
- 2012 [Optimization of neural network for efficient EMG signal classification.](#) In: **2012 8th International Symposium on Mechatronics and its Applications (ISMA)**
- 2012 [Formulation of hybrid 3D image segmentation algorithm based partial differential equation.](#) In: **International Conference on Mathematical Application in Engineering (ICMAE2012)**

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- 2011 [Web-Based Database and SMS to Facilitate Healthcare Medical Emergency](#). In: **Australasian Workshop on Health Informatics and Knowledge Management (HIKM 2011),**
- 2011 [Speech compression using compressive sensing on a multicore system](#). In: **4th International Conference on Mechatronics (ICOM 2011)**
- 2011 [Characterization of materials using non-contact inductive sensor applications](#). In: **The 4th International Conference on Mechatronics (ICOM'11)**
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- 2011 [Vehicle clamping and alternative parking management and control systems](#). In: **2011 4th International Conference on Mechatronics: Integrated Engineering for Industrial and Societal Development (ICOM 2011)**
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- 2011 [A tree-based QoS multicast routing protocol for MANETs](#). In: **4th International Conference on Mechatronics (ICOM'11)**
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- 2011 [Mobility support in MPLS network](#). In: **The 6th International Conference on Telecommunication Systems, Services, and Applications**
- 2011 [An Investigation of Femtocell Network Synchronization](#). In: **2011 IEEE Conference on Open Systems**
- 2011 [Analysis of rectifier circuits for low power and sensing application](#). In: **4th International Conference on Mechatronics (ICOM'11)**

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- 2011 [VHDL modelling of fixed-point DWT for the purpose of EMG signal denoising.](#) In: **3rd International Conference on Computational Intelligence, Communication Systems and Networks (CICSyN 2011)**
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- 2010 [Foreground segmentation-based human detection with shadow removal.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2010)**
- 2010 [Natural speaker-independent Arabic speech recognition system based on Hidden Markov Models using Sphinx tools.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2010)**
- 2010 [Fluorescence decay analysis using exponential compensation deconvolution.](#) In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
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- 2010 [Development of an Arabic text-to-speech system.](#) In: **International Conference on Computer and Communication Engineering, ICCCE'10**
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- 2010 [Smart antenna design based on direction of arrival \(DOA\) and beamforming optimization.](#) In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
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- 2010 [Design and evaluation of lightweight IEEE 802.11p-based TDMA MAC method for road side-to-vehicle communications.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2010)**
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