

# FARHAT ANWAR



- KULLIYAH OF ENGINEERING
- IIUM Gombak Campus
- Email address: [farhat@iium.edu.my](mailto:farhat@iium.edu.my)

## ACADEMIC QUALIFICATION

- Ph.D in Electronic and Electrical Engineering
- Master in Applied Physics & Electronics
- Bachelor in Applied Physics & Electronics

## TEACHING RESPONSIBILITIES

ADVANCED COMP.COMM.NETWORKS	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
ADVANCED COMPUTER COMMUNICATION NETWORKS	2015/2016 2016/2017 2017/2018 2018/2019 2019/2020
COMMUNICATION ENGINEERING LAB III	2008/2009
COMMUNICATION NETWORK SECURITY	2017/2018
COMPUTER AND INFORMATION ENG. LABII	2018/2019 2019/2020
COMPUTER AND INFORMATION ENGINEERING LAB IV	2008/2009 2009/2010 2010/2011 2011/2012 2012/2013 2013/2014 2015/2016
COMPUTER COMMUNICATION & NETWORKS	2004/2005 2005/2006 2006/2007 2007/2008 2008/2009 2009/2010
COMPUTER COMMUNICATIONS AND NETWORKS	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
COMPUTER COMMUNICATIONS NETWORKS	2008/2009
COMPUTER INFORMATION ENGINEERING LAB II	2018/2019 2019/2020 2020/2021
COMPUTER NETWORK SECURITY	2017/2018 2018/2019 2019/2020 2020/2021
Communication Networks Security	2019/2020 2020/2021
DATA AND COMMUNICATIONS SYSTEMS	2017/2018
DATA COMMUNICATIONS	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

DATA COMMUNICATIONS AND NETWORKING	2008/2009
DATA STRUCTURES & ALGORITHMS DESIGN	2001/2002 2007/2008
DIGITAL LOGIC DESIGN	2001/2002
OBJECT ORIENTED PROGRAMMING	1999/2000 2000/2001 2001/2002 2002/2003 2003/2004 2004/2005
OBJECT ORIENTED PROGRAMMING (LAB)	2002/2003 2003/2004
OBJECT ORIENTED PROGRAMMING FOR ENGINEERS	2005/2006 2006/2007
PERFORMANCE ANALYSIS	1999/2000 2000/2001 2001/2002 2002/2003 2003/2004 2004/2005 2005/2006 2006/2007 2007/2008 2008/2009 2009/2010
PERFORMANCE MODELLING OF COMPUTER SYSTEMS	1999/2000 2001/2002 2002/2003 2004/2005 2005/2006 2006/2007 2007/2008 2009/2010 2010/2011 2011/2012 2012/2013
WIRELESS PERSONAL COMMUNICATION	2000/2001

## RESEARCH PROJECTS

### In Progress

**2019 - Present** Investigation on the Effectiveness of a Packet Scheduling Algorithm for Health Care in Cognitive Fifth Generation (5G) Mobile Networks

**2019 - Present** Decision and Game Theory based Comprehensive Tactical Modelling of Node Misbehaviour for Threat Computing in MANET based IoT System

**2018 - Present** Game Theoretic Approach for Exhaustive Tactical Modelling of Node Misbehavior in Adhoc Networking based IoT Paradigm

**2016 - Present** Eradicating Multi-Channel Dependency for Authentication and Authorization in Secure E-Banking Applications

**2009 - Present** VSLI and MEMS Research Unit

**2009 - Present** VSLI and System Design Research Unit

**Unknown - Present** Game Theoretic Approach for Exhaustive Tactical Modelling of Node Misbehavior in Adhoc Networking based IoT Paradigm

### Completed

**2018 - 2019** Game Theoretic Approach for Exhaustive Tactical Modelling of Node Misbehavior in Adhoc Networking based IoT Paradigm

- 2016 - 2018** Eradicating Multi-Channel Dependency for Authentication and Authorization in Secure E-Banking Applications
- 2014 - 2017** Design and Development of Chipless Ultra Wideband RFID System
- 2013 - 2018** Design and Modelling of Novel Dynamic Bandwidth Aggregation Scheme in Heterogeneous Wireless Network (HWN) for Mission Critical Applications
- 2013 - 2015** Optimised Multicast Support for Mobile Sender in Wireless Mesh Networks
- 2012 - 2015** Modelling and simulation of heterogeneous high speed campus network for collaborative learning
- 2011 - 2013** An Investigation of Handoff Latency Reduction Mechanism for Mobile Internet Protocol Version 6 (MIPv6)
- 2011 - 2013** Design And Development Of A Novel Energy Distribution Scheme For Cluster-Based Routing In Wireless Sensor Networks
- 2011 - 2013** Hardware Prototyping of Photoplethysmography Based Cardiac Monitoring Technique for Devising a Practical Remote Health Monitor
- 2011 - 2012** RU 2011: Design and Evaluation of Network Mobility Protocol to Achieve Seamless Handoff
- 2010 - 2011** Design requirement and analysis of clustering routing protocols for the development of multipurpose sensor networking
- 2010 - 2011** An Enhanced Network Mobility Protocol to Achieve Seamless Handoff
- 2009 - 2011** Development of an Efficient Portable Algorithm for the Grid Environment
- 2009 - 2011** Network Architecture and Hybrid Routing Protocol Design for Next-Generation Wireless Mesh Networks.
- 2008 - 2011** Development of a Robust and Scalable Routing Protocol for Wireless Mesh Networks.
- 2008 - 2011** Provision of Research Services in W1MAX Mesh Protocol Design for MIMOS Wireless Networks and Protocol Lab
- 2007 - 2011** Development of Seamless IP- Based Communication Architecture With Enhance Quality of Services (Qos) for High Speed Mobile Node
- 2007 - 2011** An Investigation on Performance of DHT-BASED Query Routing Protocols to Improve Qos in Peer-To-Peer (P2P) Computer Networks
- 2007 - 2011** A New Multi-Biometric based Algorithm for Human Verification.
- 2006 - 2008** Hardware Implementation Of A Real Time Image Compression System For Next Generation Mobile Communications

## PUBLICATIONS

### Article

- 2020** [A novel multi-agent and multilayered game formulation for Intrusion Detection in Internet of Things \(IoT\).](#) IEEE Access , 8 pp.98481-98490
- 2020** [A game theory-based strategic approach to ensure reliable data transmission with optimized network operations in futuristic Mobile Adhoc Networks.](#) IEEE Access , 8
- 2020** [MANET security appraisal: Challenges, essentials, attacks, countermeasures & future directions.](#) International Journal of Recent Technology and Engineering (IJRTE) , 8 (6) pp.3013-3024
- 2020** [Scrutinising internet banking security solutions.](#) International Journal of Information and Computer Security , 12, (2-3) pp.269-302
- 2020** [A comprehensive insight into game theory in relevance to cyber security.](#) Indonesian Journal of Electrical Engineering and Informatics (IJEEI) , 8 (1) pp.189-203
- 2019** [ECM-GT: design of efficient computational modelling based on game theoretical approach towards enhancing the security solutions in MANET.](#) International Journal of Soft Computing and Engineering , 8 (7) pp.506-519
- 2019** [A novel bio-inspired routing algorithm based on ACO for WSNs.](#) Bulletin of Electrical Engineering and Informatics , 8 (2) pp.718-728
- 2018** [Internet of things security vulnerabilities and recommended solutions.](#) International Journal of Engineering & Technology , 7 (4) pp.4899-4904
- 2018** [Rehashing system security solutions in e-banking.](#) International Journal of Engineering & Technology , 7 (4) pp.4905-4910
- 2018** [Bandwidth allocation policy using the game theory model in heterogeneous wireless networks.](#) IPASJ International Journal of Information Technology (IJIT) , 6 (7) pp.9-20
- 2018** [Analysis of packet reordering delay for bandwidth aggregation in heterogeneous wireless networks.](#) IPASJ International Journal of Information Technology (IJIT) , 6 (7) pp.9-20
- 2018** [to re-use.](#) Indian Journal of Science and Technology,
- 2018** [A survey on MANETs: architecture, evolution, applications, security issues and solutions.](#) Indonesian Journal of Electrical Engineering and Computer Science , 12 (2) pp.832-842
- 2018** [Game theory for resource allocation in heterogeneous wireless networks - a review.](#) Indonesian Journal of Electrical Engineering and Computer Science , 12 (2) pp.843-851
- 2018** [Radio Access Technology \(RAT\) selection mechanism using TOPSIS method in Heterogeneous Wireless Networks \(HWN\).](#) Indonesian Journal of Electrical Engineering and Computer Science , 12 (2) pp.852-864
- 2018** [Secure annihilation of out-of-band authorization for online transactions.](#) Indian Journal of Science and Technology , 11 (5) pp.1-9

- 2018** [A survey on MANETs: architecture, evolution, applications, security issues and solutions.](#) Indonesian Journal of Electrical Engineering and Computer Science , 12 (2) pp.832-842
- 2018** [A critical insight into the effectiveness of research methods evolved to secure IoT ecosystem.](#) International Journal of Information and Computer Security pp.1-23
- 2017** [Development of approximate prediction model for 3-DOF helicopter and benchmarking with existing controllers.](#) Indonesian Journal of Electrical Engineering and Computer Science , 8 (2) pp.502-510
- 2017** [Performance Enhancement of NEMO based VANET using localization Router \(LR\) to reduce handoff delays.](#) Indonesian Journal of Electrical Engineering and Computer Science , 8 (2) pp.511-521
- 2017** [Cryptography as a Service \(CaaS\): Quantum cryptography for secure cloud computing.](#) Indian Journal of Science and Technology , 10 (7) pp.1-7
- 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
- 2017** [The effect of network's size on the performance of the gateway discovery and selection scheme for MANEMO.](#) Indonesian Journal of Electrical Engineering and Informatics (IJEEI) , 5 (4) pp.351-356
- 2017** [Securing electronic transactions via payment gateways: a systematic review.](#) International Journal Internet Technology and Secured Transactions , 7 (3) pp.245-269
- 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** [Design and implementation of a five stage pipelining architecture simulator for RiSC-16 instruction set.](#) Indian Journal of Science and Technology , 10 (3) pp.1-9
- 2017** [A real-time integrated fire detection and alarm \(FDA\) system for network based building automation.](#) Indian Journal of Science and Technology , 10 (41) pp.1-14
- 2016** [DFAM: A distributed feedback analysis mechanism for knowledge based educational big data.](#) Jurnal Teknologi , 78 (12-3) pp.31-38
- 2016** [Enhancements of the dynamic TXOP limit in EDCA through a high-speed wireless campus network.](#) Wireless Personal Communications , 90 (4) pp.1647-1672
- 2016** [MANET - A cogitation of its design and security issues.](#) Middle-East Journal of Scientific Research , 24 (10) pp.3094-3107
- 2015** [Parameters used in gateway selection schemes for Internet connected MANETs: a review.](#) International Journal of Computer, Information, Systems and Control Engineering , 9 (1) pp.360-364
- 2014** [Effect of 3 key factors on average end to end delay and jitter in MANET.](#) Journal of ICT Research and Applications , 8 (2) pp.113-125
- 2014** [Manifestation and mitigation of node misbehaviour in adhoc networks.](#) Wulfenia Journal , 21 (3) pp.462-470

- 2013** [An investigation of scheduling and packet reordering algorithms for bandwidth aggregation in heterogeneous wireless networks.](#) Middle-East Journal of Scientific Research , 16 (12) pp.1613-1623
- 2013** [Two dimensional array based overlay network for balancing load of peer-to-peer live video streaming.](#) IOP Conference Series: Materials Science and Engineering , 53 pp.012065 -1
- 2013** [How to model wireless mesh networks topology.](#) IOP Conference Series: Materials Science and Engineering , 53 (1) pp.1-6
- 2013** [Performance analysis of IIUM wireless campus network.](#) IOP Conference Series: Materials Science and Engineering , 53 (1)
- 2013** [Review paper of gateway selection schemes for MANET of NEMO \(MANEMO\).](#) IOP Conference Series: Materials Science and Engineering , 53 (1) pp.012047
- 2013** [Fuzzy logic based handoff latency reduction mechanism in layer 2 of heterogeneous mobile IPv6 networks.](#) IOP Conference Series: Materials Science and Engineering , 53 (1) pp.012085
- 2013** [Enhanced handoff latency reduction mechanism in layer 2 and layer 3 of mobile IPv6 \(MIPv6\) network.](#) Australian Journal of Basic and Applied Sciences , 7 (6) pp.658-671
- 2013** [Architectural framework for mobile multicast support in wireless mesh networks.](#) ScienceAsia , 39S (1) pp.95-102
- 2012** [A survey of power-efficient gathering of sensor information system based routing protocols of wireless sensor networks.](#) Sensors & Transducers Journal , 142 (7) pp.10-22
- 2012** [Enhanced clustering routing protocol for power-efficient gathering in wireless sensor network.](#) International Journal of Communication Networks and Information Security , 4 (1) pp.18-28
- 2012** [Enhancing performance of MAODV routing protocol for wireless mesh network using integrated multiple metrics technique \(IMMT\).](#) International Journal of Networks and Communications , 2 (2) pp.1-6
- 2012** [Vertical handoff reduction mechanism using IEEE 802.21 standard in mobile IPv6 \(MIPv6\) network.](#) International Journal of Computer Networks and Wireless Communications (IJCNC) , 2 (4) pp.519-525
- 2011** [Simulation evaluation of DiffServ approach integrated in MIPv6 networks.](#) Australian Journal of Basic and Applied Sciences , 5 (5) pp.386-396
- 2011** [An enhanced scheme to support QoS in MIPv6 based networks using DiffServ.](#) Australian Journal of Basic and Applied Sciences , 5 (6) pp.447-455
- 2011** [Analysis of Radio Model Performance for Clustering Sensor Networks.](#) Sensors & Transducers Journal , 128 (5) pp.27-38
- 2011** [An enhanced link repair technique for MAODV routing protocol.](#) international journal of computing & information technology(IJCIT) , 3 (1) pp.1-13

- 2011** [A novel biased energy distribution \(BED\) technique for cluster-based routing in wireless sensor networks.](#) International Journal of Smart Sensing and Intelligent Systems , 4 (2) pp.161-173
- 2011** [Mobile multicast in wireless mesh networks .](#) Australian Journal of Basic and Applied Sciences , 5 (9) pp.957-966
- 2010** [The enhanced fault-tolerance mechanism of AODV routing protocol for Wireless Sensor Network .](#) International Journal of Computer Science and Network Security (IJCSNS) , 10 (6) pp.41-50
- 2010** [An Enhancement of AODV routing protocol for more robust wireless sensor network .](#) International Journal of Computer and Network Security (IJCSNS) , 2 (7) pp.18-26
- 2009** [Performance comparison of proactive and reactive multicast routing protocols over wireless mesh networks.](#) International Journal of Computer Science and Network Security (IJCSNS) , 9 (6) pp.55-62
- 2009** [An investigation into clustering routing protocols for wireless sensor networks.](#) Sensors & Transducers Journal , 106 (7) pp.48-61
- 2009** [Performance of ad hoc routing protocols in mobile WiMAX environment.](#) Lecture Notes in Electrical Engineering , 33 pp.53-65
- 2009** [Integrated metric-ad hoc on-demand distance vector: a routing protocol over Wireless Mesh Networks.](#) Journal of Computer Science , 5 (7) pp.511-518
- 2009** [Multibiometric systems based verification technique.](#) European Journal of Scientific Research , 34 (2) pp.260-270
- 2009** [Performance analysis of on-demand routing protocols in wireless mesh networks.](#) Informatica Economica , 13 (2) pp.120-127
- 2008** [Performance Analysis of Ad hoc Routing Protocols in Mobile WiMAX Environment.](#) IAENG International Journal of Computer Science , 35 (3) pp.353-360
- 2008** [An approach to enhance aggregated source specific multicast scheme.](#) Sunway Academic Journal 5 , 5 pp.139-148
- 2008** [A proposed QoS multicast routing framework for next-generation Wireless Mesh Network .](#) International Journal of Computer Science and Network Security (IJCSNS) , 8 (9) pp.280-284
- 2008** [Simulation and analysis of an admission control mechanism for MPLS DS-TE.](#) Computer Communications , 31 (10) pp.2178-2184
- 2007** [Mobility Support in IP Multicast: Proposals Review and Evaluation.](#) Journal of Mobile Multimedia , 3 (1) pp.3-14
- 2007** [Learning Algorithm effect on Multilayer Feed Forward Artificial Neural Network performance in image coding .](#) Journal of Engineering Science and Technology , 2 (2) pp.188-199
- 2007** [An efficient technique for human verification using finger stripes geometry.](#) International Journal of Soft Computing , 2 (3) pp.445-449

- 2007 [A performance comparison of proactive and reactive routing protocols of Mobile Ad-hoc Network \(MANET\)](#). Journal of Engineering and Applied Sciences , 2 (5) pp.891-896
- [A Novel Biased Energy Distribution \(BED\) Technique for Cluster-Based Routing in Wireless Sensor Networks \(duplicate copy\)](#). ICOM 2011
- Conference or Workshop Item**
- 2020 [Bayesian signaling game based efficient security model for MANETs](#). In: **2019 Future of Information and Communication Conference (FICC)**
- 2019 [Energy-efficient scalable routing protocol based on ACO for WSNS](#). In: **7th IEEE International Conference on Mechatronics Engineering - ICOM'19**
- 2019 [Offline OTP based solution for secure internet banking access](#). In: **2018 IEEE Conference on e-Learning, e-Management and e-Services (IC3e)**
- 2018 [A noble approach of ACO algorithm for WSN](#). In: **7th International Conference on Computer and Communication Engineering (ICCCE) 2018**
- 2017 [Network-based real-time integrated Fire Detection and Alarm \(FDA\) system with building automation](#). In: **6th International Conference on Mechatronics (ICOM'17)**
- 2016 [The Directional Hierarchical AODV \(DH-AODV\) routing protocol for wireless mesh networks](#). In: **2015 International Conference on Computing, Control, Networking, Electronics and Embedded Systems Engineering (ICCCNEE 2015)**
- 2015 [Optimized routing algorithm for mobile multicast source in Wireless Mesh Networks](#) . In: **2015 11th International Conference on Innovations in Information Technology (IIT 2015)**
- 2014 [A scheduling algorithm for bandwidth aggregation in heterogeneous wireless network](#). In: **International Conference on Informatics, Electronics and Vision (ICIEV 2014)**
- 2014 [Differential evolution optimization for constrained routing in Wireless Mesh Networks](#). In: **Frontiers of Communications, Networks and Applications (ICFCNA 2014 - Malaysia), International Conference on**
- 2014 [The impact of randomness on high speed wireless campus network in IEEE802.11e](#). In: **International Conference on Informatics, Electronics & Vision (ICIEV 2014)**
- 2014 [Traffic aware wireless sensor networks MAC protocol for smart grid applications using spiral backoff mechanism](#). In: **5th International Conference on Computer and Communication Engineering (ICCCE2014)**
- 2014 [Effect of mobility model and packet size on throughput in MANET's](#). In: **5th International Conference on Computer and Communication Engineering (ICCCE 2014)**
- 2014 [Impact of packet size and node mobility pause time on average end to end delay and jitter in MANET's](#). In: **5th International Conference on Computer and Communication Engineering (ICCCE 2014)**



- 2014 [Performance analysis of DSR protocol on the basis of DSSS rate.](#) In: **5th International Conference on Computer and Communication Engineering (ICCCE 2014)**
- 2014 [Two dimensional array based overlay network for reducing delay of peer-to-peer live video streaming.](#) In: **5th International Conference on Computer and Communication Engineering**
- 2014 [Performance evaluation of seed values and pause times over high speed Wireless Campus Network in IEEE802.11e.](#) In: **UKSim-AMSS 1st International Conference on Systems Informatics, Modelling and Simulation**
- 2013 [An analysis of resource sharing scheme in heterogeneous wireless campus network.](#) In: **2013 International Conference on Computing, Electrical and Electronics Engineering (ICCEEE)**
- 2013 [A review on scheduling schemes of high speed wireless campus network for Interactive Multimedia transmission.](#) In: **2013 IEEE 11th Malaysia International Conference on Communication (MICC 2013)**
- 2013 [Two dimensional array based overlay network for balancing load of peer-to-peer live video streaming.](#) In: **5th International Conference on Mechatronics (ICOM'13)**
- 2013 [Wireless sensor network for landslide monitoring.](#) In: **3rd International Conference on Geotechnique, Construction Materials and Environment (GEOMATE 2013)**
- 2012 [Gateway placement optimisation problem for mobile multicast design in wireless mesh networks .](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012), 3-5 July 2012, Kuala Lumpur, Malaysia**
- 2012 [Quality of service over heterogeneous network with MPLS back bone .](#) In: **International Conference on Smart Grid Systems (ICSGS 2011)**
- 2012 [Enhancement of handoff latency reduction mechanism of Mobile Internet Protocol Version 6 \(MIPv6\).](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**
- 2012 [Performance study of Hybrid Wireless Mesh Protocol\(HWMP\) for IEEE 802.11s WLAN Mesh Networks .](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**
- 2012 [A study of CGA- \(cryptographically generated address\) signature based authentication of binding update messages in low-end MIPv6 node.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**
- 2012 [A primary interface selection policy in heterogeneous networks based on QoS.](#) In: **International Conference on Computer and Communication Engineering (ICCCE 2012)**
- 2011 [Improved link repair technique for multicast routing in Wireless Mesh Network.](#) In: **2011 4th International Conference on Mechatronics: Integrated Engineering for Industrial and Societal Development (ICOM 2011)**

- 2011 [A parallel duplicate address detection \(PDAD\) mechanism to reduce handoff latency of mobile internet protocol version 6 \(MIPv6\)](#). In: **4th International Conference on Mechatronics (ICOM'11)**
- 2011 [A novel biased energy distribution \(BED\) scheme for clustering sensor networks](#). In: **4th International Conference on Mechatronics (ICOM'11)**
- 2011 [Investigative analysis of clustering routing protocols for scalable sensor networks](#). In: **2011 4th International Conference on Mechatronics: Integrated Engineering for Industrial and Societal Development (ICOM 2011)**
- 2011 [An enhanced scheme for QoS in mobile IPv6 environment](#). In: **4th International Conference on Mechatronics: Integrated Engineering for Industrial and Societal Development (ICOM'11)**
- 2011 [Evaluation of radio propagation techniques for hierarchical sensor networks](#). In: **4th International Conference on Mechatronics (ICOM'11)**
- 2010 [The enhanced fault-tolerant AODV routing protocol for Wireless Sensor Network](#). In: **Second International Conference on Computer Research and Development (ICCRD 2010)**
- 2010 [ENFAT-AODV: the fault-tolerant routing protocol for high failure rate Wireless Sensor Networks](#). In: **2010 2nd International Conference on Future Computer and Communication (ICFCC 2010)**
- 2010 [Design of robust protocol to enhance QoS in mobile IPV6 environment](#). In: **International Conference on Computer and Communication Engineering (ICCCE 2010)**
- 2010 [Design and implementation of a Robust Mobile multicast-enabled router. \(dummy\)](#). In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [Multibiometric based personal verification using the fusion of hand and finger stripe geometry](#). In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [A new link repair technique for MAODV routing protocol](#). In: **The 2010 IAENG international conference on communication systems and applications (ICCSA'10)**
- 2010 [A simulation based performance comparison of routing protocol on Mobile Ad-hoc Network \(proactive, reactive and hybrid\)](#). In: **International Conference on Computer and Communication Engineering (ICCCE 2010)**
- 2010 [Multibiometric based personal verification using the fusion of hand and finger stripe geometry](#). In: **IIUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [An enhancement of fault-tolerant routing protocol for Wireless Sensor Network](#). In: **International Conference on Computer and Communication Engineering (ICCCE 2010)**
- 2009 [An integrated scheme to improve performance of fast mobile IPv6 handover in IEEE 802.16e network](#). In: **IEEE 9th Malaysia International Conference on Communications (MICC 2009)**

- 2009 [Integrating multiple metrics to improve the performance of a routing protocol over wireless mesh networks.](#) In: **International Conference on Signal Processing Systems (ICSPS 2009)**
- 2009 [A simulation based performance analysis of reactive routing protocols in Wireless Mesh Networks.](#) In: **2009 International Conference on Future Networks**
- 2009 [An integrated scheme to improve performance of fast mobile IPv6 handover in IEEE 802.16e network.](#) In: **Proceedings of the 2009 IEEE 9th Malaysia International Conference on Communications**
- 2009 [Smart card design to enhance fare collection for public transportation sector in Bangladesh.](#) In: **Proceedings of the international conference on software engineering & computer systems 2009 (ICSECS'09)**
- 2008 [Performance investigation of earth-to-satellite microwave link due to rain fade in Bangladesh.](#) In: **Proceedings of 11th International Conference on Computer and Information Technology, ICCIT 2008**
- 2008 [Investigating mobile motion prediction in supporting seamless handover for high speed mobile node.](#) In: **International Conference on Computer and Communication Engineering 2008 (ICCCE08)**
- 2008 [A comparative study of source specific multicast and aggregated source specific multicast.](#) In: **International Conference on Computer and Communication Engineering 2008 (ICCCE08)**
- 2008 [Prediction of received signal power and propagation path loss in open/rural environments using modified free-space loss and Hata models.](#) In: **IEEE International RF and Microwave Conference 2008**
- 2005 [Mobility issues in hierarchical mobile IP.](#) In: **3rd International Conference: Sciences of Electronic, Technologies of Information and Telecommunications (SETIT 2005)**

#### Book

- 2011 [Research issues in wireless communications and networking.](#) IJUM Press . ISBN 978-967-418-149-9

#### Book Section

- 2019 [An adaptive and viable face identification for Android mobile devices.](#) In: **Handbook of Multimedia Information Security: Techniques and Applications**, Springer, Cham . ISBN 978-3-030-15886-6 , pp.301-322
- 2019 [Critical challenges in access management schemes for smartphones: an appraisal.](#) In: **Smart Network Inspired Paradigm and Approaches in IoT Applications** Springer, Singapore . ISBN 978-981-13-8613-8 , pp.87-113
- 2019 [Internet of things: the concept, inherent security challenges and recommended solutions.](#) In: **Smart Network Inspired Paradigm and Approaches in IoT Applications** Springer, Singapore . ISBN 978-981-13-8613-8 , pp.63-86
- 2019 [Internet of Things—the concept, inherent security challenges and recommended solutions.](#) In: **Smart Network Inspired Paradigm and Approaches in IoT Applications**, Springer Nature Singapore . ISBN 978-981-13-8613-8 , pp.63-86

- 2019 [Critical challenges in access management schemes for smartphones: an appraisal.](#) In: **Smart Network Inspired Paradigm and Approaches in IoT Applications**, Springer Nature Singapore . ISBN 978-981-13-8613-8 , pp.87-113
- 2019 [An adaptive and viable face identification for android mobile devices.](#) In: **Handbook of Multimedia Information Security: Techniques and Applications** Springer Nature Switzerland . ISBN 978-3-030-15887-3 , pp.301-322
- 2014 [Performance analysis of multicast ad-hoc on-demand distance vector \(MAODV\) routing protocol.](#) In: **Advancements in computer and communications engineering** IIUM Press . ISBN 9789674182830 , pp.115-130
- 2014 [Hybrid approach support QoS for mobile users.](#) In: **Advancements in computer and communications engineering** IIUM Press . ISBN 9789674182830 , pp.15-26
- 2014 [QoS challenges in mobile environment.](#) In: **Advancements in computer and communications engineering** IIUM Press . ISBN 9789674182830 , pp.35-42
- 2014 [Performance evaluation of an improved admission control for differentiated MPLS-TE tunnels.](#) In: **Advancements in computer and communications engineering** IIUM Press . ISBN 9789674182830 , pp.131-142
- 2014 [Evaluation of MIPv6 approach to provide multicast to mobile nodes.](#) In: **Advancements in computer and communications engineering** IIUM Press . ISBN 9789674182830 , pp.3-14
- 2011 [Prospects and problems of cognitive radio network architectures in wireless sensor networks.](#) In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.245-254
- 2011 [Information and communication privacy in wireless sensor networks.](#) In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.282-289
- 2011 [Investigation of techniques for combating malicious objects in unreliable wireless sensor networks.](#) In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.290-300
- 2011 [Network QoS architecture.](#) In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 9789674181499 , pp.319-324
- 2011 [Cellular radio based vehicular location finding.](#) In: **Mechatronics book series: Selected papers from ICOM'01, ICOM'05 and ICOM'08** IIUM Press . ISBN 9789670225685 , pp.426-438
- 2011 [Web based documentation system for dynamic roadmaps.](#) In: **Mechatronics book series: Selected papers from ICOM'01, ICOM'05 and ICOM'08** IIUM Press . ISBN 9789670225685 , pp.472-479
- 2011 [Internet quality of service architectures .](#) In: **QoS And Mobile Technologies** IIUM Press . ISBN 9789674181420 , pp.11-16
- 2011 [Quality of Service \(QoS\) Ad-Hoc On-demand Distance Vector \(AODV\).](#) In: **QoS And Mobile Technologies** IIUM Press . ISBN 9789674181420 , pp.27-32
- 2011 [QoS routing in ad-hoc wireless networks.](#) In: **QoS And Mobile Technologies** IIUM Press . ISBN 9789674181420 , pp.33-39

- 2011 [Performance evaluation of hierarchical mobile IP](#). In: **Mechatronics book series: Selected papers from ICOM'01, ICOM'05 and ICOM'08** IIUM Press . ISBN 9789670225685 , pp.500-508
- 2011 [Enhanced multicast routing protocol for wireless mesh networks \(WMN\)](#). In: **Research Issues in Wireless Communication Networking** . IIUM Press . ISBN 9789674181499 , pp.38-44
- 2011 [Path selection protocols for IEEE 802.11s wlan mesh networks](#). In: **Research Issues in Wireless Communication Networking**. IIUM Press . ISBN 978-967-418-149-9 , pp.45-48
- 2011 [Performance evaluation of selected DHT P2p routing protocols](#). In: **Research Issue in Wireless Communication Networking**. IIUM Press . ISBN 978-967-418-149-9 , pp.55-62
- 2011 [Multicasting challenges in wireless mesh networks](#). In: **Multimedia Encryption, Transmission and Authentication** IIUM Press . ISBN 978-967-418-160-4 , pp.241-248
- 2011 [Deployment challenges of MIPv6](#). In: **Research Issue in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.94-100
- 2011 [Enhanced sigma protocol for high speed mobile node in IP based communication system](#). In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.101-107
- 2011 [Analysis of handoff latency factors for MIPv6 network](#) . In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.108-115
- 2011 [Practical applications and design challenges of wireless heterogeneous sensor networks](#). In: **Research Issues in Wireless Communication Networking** IIUM Press . ISBN 978-967-418-149-9 , pp.139-144
- 2011 [Operation of context transfer protocol](#). In: **Advances in mobility management for IP networks** IIUM Press . ISBN 9789674181406 , pp.15-20
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