

## Qasem S. Abu Al-Haija, PhD, Electrical & Computer Engineering

*Address: Department of Cybersecurity, Princess Sumaya University of Technology (PSUT), Amman, Jordan.*

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**EDUCATION**     **PhD. in Computer and Information Systems Engineering (CISE)**  
Tennessee State University (TSU), Aug-2018 to Aug-2020.     **(GPA=4.00/4.00)**  
Dissertation: Intelligent IoT Attacks Detection via Non-Traditional Machine Learning

**MSc. in Computer Engineering (CE)**     **(GPA=4.00/4.00)**  
Jordan University of Sciences and Technology (JUST), SEP-2007 to DEC-2009  
Thesis: Efficient Algorithms for ECC Cryptography using new Coordinates Systems

**BSc. in Electrical and Computer Engineering (ECE)**  
Mu'tah University, SEP-2000 TO JAN-2005, Jordan.  
Senior Project: Distributed Digital Image Processing Via Java and VB.Net.

**Research Interests**     Machine Learning, Cybersecurity, IoT/CPS Modeling, and Embedded Systems.

**EXPERIENCE**     **Assistant Professor**     Sep/2021 - Current  
*Princess Sumaya University for Technology, Department of Cybersecurity.*  
\* Teaching and Researching in areas of: Computer Science, AI, and Cybersecurity.

**Assistant Professor**     Feb/2021 - Aug/2021  
*University of Petra, Data Science and Artificial Intelligence Department, Jordan.*  
\* Teaching and Researching in areas of: Data science, AI, and Cybersecurity.  
\* Current Research Project: Deep Intrusion Detection System for Networked UAVs.

**Postdoctoral Researcher**     Sep/2020 - Jan/2021  
*Tennessee State University, Electrical & Computer Engineering Department, USA.*  
\* Conducting research in areas of: Machine learning, IoT/CPS and Cyber-security.

**Graduate Assistant (TA/RA)**     Aug/2018 - Aug/2020  
*Tennessee State University, Electrical & Computer Engineering Department, USA.*  
\* Taught Digital Logic Lab and Electronics Lab for ECE and NES students.  
\* Research assistant with many faculty at CS and ECE departments.

**Lecturer and Research**     Mar/2011 - Aug/2018  
*King Faisal University, Electrical Engineering Department, Saudi Arabia.*  
\* Courses Taught: Microprocessors Systems, Digital Logic Design, Numerical Methods  
Computer Networks, Hardware Design II, Senior Design, Introduction to Engineering  
Engineering Computing Skills (I/II) via MATLAB, IT for Bio-medical Engineering.  
\* Labs Taught/Prepared: Digital Design Lab, Microprocessors Lab, Mechatronics Lab  
Hardware Design II Lab, Network Simulation Lab, Arduino Microcontroller Lab.  
\* Supervised many capstone graduation projects including: FPGA Design of RSA  
Cryptoprocessor, Microcontroller design of Car accident detection system, FPGA  
Design of Schmidt-Samoa Cryptosystem, & Developing a Secure KFU E-Mail App.  
\* Conducted researches in the fields of cryptography and embedded system design.  
\* Served as a member of several committees: Scientific research, IT-Knowledge Manag.  
EE Accreditation, EE Industrial relations, EE Curriculum, Academic-Student affairs  
Public relations and Safety inspection committee.

**Consultant and Researcher-Distance work**     Jan/2010 - Jan/2012  
*University Putra Malaysia (UPM), Department of Inf.Sys and Mathematical Research.*  
\* Assistant researcher in supervising the PhD dissertation of Mr. Mohamad Al-Khatib.  
\* During this period, we've published 5 papers related to Elliptic Curve Cryptography.

**Graduate Assistant**

Feb/2009 - Feb/2010

*Jordan University of Science and Technology, Computer Engineering Department.*

\* Assisting the faculty members of computer department in the teaching and research.

**Lecturer and Lab Supervisor**

Sep/2008 - Sep/2009

*Granada College for Technology, Department of Information Technology, Jordan*

\* Courses taught: Computer Networks, Operating Sys., Visual Basic, Computer Skills.

\* Labs supervisor and administrator of college servers [Internet/ database/ security].

**Instructor**

Sep/2007- Sep/2008

*Jordan College for Sciences & Technology, Department of Management Info. System*

\* Courses Taught: Computer Networks, C++, Java I, Visual Basic, Database/SQL.

**Technical Trainer**

Aug/2005- Aug/2007

*Technical College of Hafer Al-Batin, Dept. of Computer Technology, Saudi Arabia*

\* Courses/Labs taught: Fundamentals of Electrical & Electronic Systems, Digital Logic

Computer Hardware and Software, Computer Networks, Principles of Operating Sys.

Computer Applications, Computer Programming (I/II), Database Management Sys.

**TRAINING  
COURSES &  
WORKSHOPS**

**Attended Technical Training Courses:**

CCNA, ICDL, Java Programming, Win-2000 Server installation and administration, Computer maintenance (HW and SW), Webpage Design via MS-FrontPage, Internet Security Fundamentals, NI LabVIEW Hands-On, Arduino Microcontrollers Design, Web application design via ASP.Net2003, C#.Net 2003 & SQL Server 2000.

**Attended Academic Training Courses:**

Wireless Communication & Mobile Networks, Scientific Research Strategies, Framework of Understanding Teaching, Quality of Administration Planning & Management, E Library & its role in scientific research, Course report design & Thinking compass, Class Management & Exams Design, Engineering Higher Education Learning Outcomes Assessment, Developing Research Abilities: Idea & Research Management.

**Delivered Technical Training Courses:**

CCNA, CompTIA A+, Cryptography & Information Security, Pneumatic Systems and Applications, Distributed Control Systems (DCS), Webpage Design via FrontPage2003, Professional Writing Using Latex, Using Ms. Excel and Advanced Ms. Word for Scientific Research Purposes, Graphics & video processing.

**FUNDED  
RESEARCH  
PROJECTS**

**Principle-Investigator in the following projects:**

\* Design & on-field testing of wireless sensor network based air quality monitoring sys. College of Engineering, King Faisal University, Saudi 2015.

\* Monitoring of AIR quality in King Faisal University using Micro-controller and WSN Ministry of Labor, Saudi 2013.

\* Cost Effective Design for Elliptic Curve Crypto-processor (ECC) over GF ( $2^N$ ) Field Deanship of Scientific Research, King Faisal University, Saudi 2011.

\* Applying Hessian Curves in parallel to improve ECC Scalar Multiplication Hardware Prince Muqrin Chair for IT Security, King Saud University, Saudi 2009.

**Co-Investigator in the following projects:**

\* MIMO technique to mitigate negative effects of Co-channel interference in wireless cellular systems, Deanship of scientific research, King Faisal Uni., Saudi 2014.

\* Energy Conservation Strategies for Heat Dissipation and HVAC Systems in KFU Buildings, Deanship of Scientific Research, King Faisal University, Saudi 2012.

\* Efficient Cryptographic Processor for Internet and Wireless Security Based on Elliptic Curve Cryptography, Ministry of higher education, Jordan 2010

**SELECTED  
PUBLICATIONS**

- Q.A. Al-Haija**, A.A. AlSulami, ‘*High Performance Classification Model to Identify Ransomware Payments for Heterogeneous Bitcoin Networks*’. Electronics, MDPI, Vol. 10, 2021.
- Q.A. Al-Haija**, M. S. Sabatto, ‘*An Efficient Deep-Learning-Based Detection and Classification System for Cyber-Attacks in IoT Communication Networks*’, Electronics, Vol. 9, MDPI, 2020.
- Q.A. Al-Haija**, C. D. McCurry, M. S. Sabatto, ‘*A Real Time Node Connectivity Algorithm for Synchronous Cyber Physical and IoT Network Systems*’, 40<sup>th</sup> SoutheastCon 2020: IEEE Region 3’s annual conference, IEEE, NC/USA, 2020.
- Q.A. Al-Haija**, M. S. Sabatto, ‘*Multi-Class Weather Classification Using ResNet-18 CNN for Autonomous IoT and CPS Applications*’, 7<sup>th</sup> Ann. Conference on Computational Science & Computational Intelligence, IEEE, LasVeg/USA, 2020.
- Q.A. Al-Haija**, K. Nasr. ‘*Forecasting Model for Annual Growth of Cryogenic Electron Microscopy Data*’, Lecture Notes in Computer Science, Vol. 12029, Springer, 2020.
- Q.A. Al-Haija**, et. al. ‘*Design Alternatives of Euclidean Greatest Common Divisor with Enhanced Architecture*’, International Journal of Computer Aided Engineering and Technology (IJCAET), Inderscience, Vol.12(4), 2020.
- Q.A. Al-Haija**, S. Brahma ‘*Optimization of Cyber System Survivability Under Attacks Using Redundancy of Components*’, 53<sup>rd</sup> Annual Conference on Information Sciences and Systems (CISS), IEEE, USA, 2019.
- Q.A. Al-Haija**, et. al, ‘*Implementing a lightweight Schmidt-Samoa Cryptosystem for Sensory Communications*’, International Journal on Smart Sensing and Intelligent Systems (IJSSIS), Exeley Inc. Publisher, USA, Vol.12(2), 2019.
- N.A. Jebiril, **Q.A. Al-Haija**, ‘*Chapter: Cuckoo Optimization Algorithm (COA) for image processing, textbook: Nature inspired optimization techniques for image processing applications*’, Intelligent Systems Reference Library, Springer, 2019.

**SCHOLARLY  
ACTIVITIES**

- Served as a TCP member for several conferences and journals such as:**
- \* IEEE International IOT, Electronics and Mechatronics Conference, Canada, 2020/2021.
  - \* IEEE Int. Conference on Internet of Things and Embedded Intelligence, 2020.
  - \* IEEE 4<sup>th</sup> Int.Conference On Computer Applications and Information Security, 2020.
  - \* Notes on Number Theory and Discrete Mathematics (NNTDM), Bulgaria, 2020.
  - \* 37<sup>th</sup> IEEE International Conference on Computer Design (ICCD), UAE, 2019.
  - \* International Journal of Computing and Digital Systems, University of Bahrain, 2019.
  - \* Microprocessors and Microsystems Journal, Elsevier, 2018.
  - \* IEEE ACCESS Journal:multidisciplinary, open access journal of the IEEE, 2018.
  - \* International Journal of Embedded Systems(IJES), Inderscience, 2018.
  - \* IEEE Int. Conference on Electrical, Computing Technologies & Applications, 2017/2019.
  - \* 5<sup>th</sup> Int. Conference on Cyber Security, Cyber Welfare and Digital Forensic, 2017.
  - \* 2<sup>nd</sup> Annual Int. Conference on Information System and Artificial Intelligence, 2017.
  - \* 4<sup>th</sup> Int. Conference on Education, Technologies and Computers, Ethiopia, 2017.
  - \* 3<sup>rd</sup> Int. Conference on Information Security and Cyber Forensics, Slovakia, 2017.
  - \* IEEE 5<sup>th</sup> Int. Conference on Electronic Devices, Systems & Applications, UAE 2016.
  - \* 20<sup>th</sup> World Multi-Conference on Systemic, Cybernetics and Informatics, USA, 2016.
  - \* International Journal of Electronics and Communications, Elsevier, 2016.
  - \* IEEE Jordan Conference on Applied Electrical Eng. & Computing Tech., 2015.
  - \* Scientific Board of Computer, Electrical & Electronic Engineers, IIE, 2014.
  - \* Journal of Systemic, Cybernetics and Informatics, by IIIS, 2014.
  - \* 3<sup>rd</sup> Int. Conference on Cyber Security, Cyber Warfare & Digital Forensic, 2014.
  - \* Int. Conference on Computer Security and Digital Investigation, Malaysia, 2014.
  - \* Journal of Information Security and Applications (JISA), Elsevier, from 2013.

## AWARDS AND HONORS

***During my career, I have got the following awards and recognition:***

- \* Scholarship by International Council of Systems Engineering (INCOSE), USA, 2019.
- \* Scholarship by ECE Department, Tennessee State University, USA, 2018-2020.
- \* Honored for distinguish in Elec. Eng. Dept, King Faisal University, Saudi, 2015.
- \* Honored for distinguish in Indus. relations committee, King Faisal University, 2015.
- \* Honored for distinguish in public relations committee, King Faisal University, 2015.
- \* Honored for distinguish in Engineering labs committee, King Faisal University, 2015.
- \* Honored for contribution in engineering research, King Faisal University, 2013.
- \* Honored for the participation in the service learning, Ministry of Labor, Saudi, 2013.
- \* Scholarship by Comp. Eng. Dept, Jordan University of Science & Tech., 2008-2010.

## APPRECIATION LETTERS

***During my career, I have got appreciation certificates for the following:***

- \* Organized a workshop *Arduino  $\mu$ controller* for EE students, King Faisal Uni. 2016.
- \* Organized a workshop *Avoiding Test Anxiety* for EE students, King Faisal Uni. 2016.
- \* Presented a seminar *Security & Cryptography*, King Faisal Uni. 2012-2015 (4 times).
- \* Referee: *4<sup>th</sup> Scientific Conf. for Higher Education*, Min. of Higher Edu. Saudi 2013.
- \* Organized *an international scientific trip for EE students*, King Faisal Uni. 2013.
- \* Presented a workshop *MS-EXCEL 2013 for faculty members*, King Faisal Uni. 2013.
- \* Presented at *Saudi Electricity Efficiency Forum & Exh.*, Min. of Water & Elec. 2012.
- \* Presented a workshop *MS-FrontPage 2013 for faculty members*, King Faisal Uni. 2012.
- \* Preparation of *computer labs at Hafer Al Batin College of Technology*, Saudi 2006.

## GENERAL SKILLS

***Besides, during my career, I have secured the following professional skills:***

- \* Networking skills: installation, troubleshooting, routing, switching & administration.
- \* Operating systems skills: Ms-Windows, Win2003 Server, UNIX OS & Linux.
- \* Digital/FPGA Design skills: VHDL, ModelSim, Quratus, ISE Synthesizer, Multisim.
- \* Engineering computing/programming skills: MATLAB, Maple-soft, C/C++/C#.Net.
- \* Microprocessors skills: 8086 Assembly coding, MDA8086 Kit, EMU8086 Emulator.
- \* Microcontrollers skills: ARM Cortex M4/Arduino MCUs, Fritzing, Keil uVisison 5.
- \* System Modeling: UML2, SysML, MagicDraw & VisualParadigm MBSE packages.
- \* Technical writing & graphics: Latex, Photoshop, Ms-Visio, Ms-FrontPage, Ms-publisher.
- \* Excellent Experience in ABET Accreditation and Course outcomes assessment.

## PROFESSIONAL MEMBERSHIPS

***Active member in the following associations:***

- \* International Council of Systems Engineering (INCOSE), USA, 2018.
- \* International Computer Science and Engineering Society (ICSSES), 2017.
- \* International Association of Engineers (IAENG), 2017.
- \* International Institute for Engineers (IIE), 2014.
- \* Society of Digital Information and Wireless Communications (SDIWC), 2013.
- \* World Academy of Science, Engineering and Technology (WASET), 2009.
- \* Jordanian Institute for Engineering (JIA), 2005.

## REFERENCES

***For referencing purposes, you can contact any of the following professors:***

***Prof. Saleh Zein-Sabatto:*** Department of Electrical and Computer Engineering, Tennessee State University, United States (USA), Email: mzein@tnstate.edu

***Prof. Manar D. Samad:*** Department of Computer Science, College of Engineering, Tennessee State University, United States (USA), Email: msamad@tnstate.edu

***Prof. Ghandi F. Manasra:*** Department of Electrical and Computer Engineering, Palestine Polytechnic University, Palestine, Email: ghandi@ppu.edu

***Prof. Mahmoud Smadi:*** Department of Electrical Engineering, College of Engineering, Hashemite University, Jordan, Email: smadi@hu.edu.jo.

## Qasem Abu Al-Haija, List of Publications

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### LIST OF CONFERENCE PAPERS

1. **Q.A. Al-Haija**, ‘*On the Security of Cyber-Physical Systems Against Stochastic Cyber-Attacks Models*’, IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), IEEE, Canada, 2021.
2. **Q.A. Al-Haija**, C. D. McCurry, M. S. Sabatto, ‘*Intelligent Self-Reliant Cyber-Attacks Detection and Classification System for IoT Communication Using Deep Convolutional Neural Network*’, Selected Papers from the 12th International Networking Conference. INC 2020. Lecture Notes in Networks and Systems, vol 180. Springer, 2021.
3. **Q.A. Al-Haija**, A. Ishtaiwi, ‘*Multi-Class Classification of Firewall Log Files Using Shallow Neural Network for Network Security Applications*’, International Conference on Soft Computing for Security Applications (ICSCS 2021). Advances in Intelligent Systems and Computing, Springer, 2021.
4. **Q.A. Al-Haija**, I.Saleh, M.Alnabhan, ‘*Detecting Port Scanning Attacks Using Logistic Regression*’, Accepted, 4th International Symposium on Advanced Electrical and Comm. Technologies (ISAECT), IEEE, 2021.
5. **Q.A. Al-Haija**, M. Smadi, O. M. Al-Bataineh, ‘*Early Stage Diabetes Risk Prediction via Machine Learning*’, Accepted, 13th International Conference on Soft Computing and Pattern Recognition (SoCPaR 2021), Lecture Notes in Networks and Systems (LNNS), Springer, 2021.
6. **Q.A. Al-Haija**, A. Al Badawi, ‘*ULIENet: User Localization in Indoor Environments via Neural Networks*’, Accepted, 4th Smart Cities Symposium (4SCS), IET, 2021.
7. **Q.A. Al-Haija**, M. Smadi, O. M. Al-Bataineh, ‘*Identifying Phasic dopamine releases using DarkNet-19 Convolutional Neural Network*’, EE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), IEEE, Canada, 2021.
8. A. Al Badawi, **Q.A. Al-Haija**, ‘*Detection of Money Laundering in Bitcoin Transactions*’, Accepted, 4th Smart Cities Symposium (4SCS), IET, 2021.
9. **Q.A. Al-Haija**, C. D. McCurry, M. S. Sabatto, ‘*A Real Time Node Connectivity Algorithm for Synchronous Cyber Physical and IoT Network Systems*’, 40<sup>th</sup> SoutheastCon 2020: IEEE Region 3’s annual conference, IEEE, NC/USA, 2020.
10. **Q.A. Al-Haija**, M. S. Sabatto, ‘*Multi-Class Weather Classification Using ResNet-18 CNN for Autonomous IoT and CPS Applications*’, 7<sup>th</sup> Annual Conference on Computational Science & Computational Intelligence (CSCI’20), IEEE, Las-Vegas/USA, 2020.
11. **Q.A. Al-Haija**, A. Adebajo, ‘*Breast Cancer Diagnosis in Histopathological Images Using ResNet-50 Convolutional Neural Network*’, IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), IEEE, Canada, 2020.
12. **Q.A. Al-Haija**, M. D. Samad ‘*Efficient LuxMeter Design Using TM4C123 Microcontroller with Motion Detection Application*’, 11<sup>th</sup> International Conference on Information and Communication Systems (ICICS2020), IEEE, 2020.
13. **Q.A. Al-Haija**, M. Smadi ‘*Parametric prediction study of global energy-related carbon dioxide emissions*’, 2<sup>nd</sup> International Conference on Electrical, Communication and Computer Engineering (ICECCE2020), IEEE, 2020.
14. **Q.A. Al-Haija**, N. Jebri ‘*ARM Cortex Based Modeling and Implementation of a Self-Controlled Traffic Light System*’, 3<sup>rd</sup> Smart Cities Symposium, IET, 2020.

15. **Q.A. Al-Haija**, H. Enshasy, M. Al-Tarayrah, '*Time-Series Model for Forecasting Short-term Future Additions of Renewable Energy to Worldwide Capacity*', Int. Conference on Data Analytics for Business and Industry (ICDABI), IEEE, 2020.
16. **Q.A. Al-Haija**, N. Jebril '*Systemic Framework of Time-Series Prediction via Feed-forward Neural Networks*', 3<sup>rd</sup> Smart Cities Symposium (SCS), IET, 2020.
17. **Q.A. Al-Haija**, S. Brahma '*Optimization of Cyber System Survivability Under Attacks Using Redundancy of Components*', 53<sup>rd</sup> Annual Conference on Information Sciences and Systems (CISS), IEEE, USA, 2019.
18. **Q.A. Al-Haija**, K. Al Nasr, '*Supervised Regression Study for Electron Microscopy Data*', 13<sup>th</sup> International Conference on Bioinformatics and Biomedicine (BIBM 2109), IEEE, San Diego, CA, USA, pp. 2661-2668, 2019.
19. A. A. Alsulami, **Q.A. Al-Haija**, et. al., '*Performance Evaluation of Dynamic Round Robin Algorithms for CPU Scheduling*', 39<sup>th</sup> SoutheastCon 2019: IEEE Region 3's annual conference, IEEE, Huntsville, Alabama, USA, 2019.
20. **Q.A. Al-Haija**, L. Tawalbeh '*Autoregressive Modeling and Prediction of Annual Worldwide Cybercrimes for Cloud Environments*', 10<sup>th</sup> International Conference on Information and Communication Systems (ICICS 2019), IEEE, 2019.
21. M. M. Asad, I. Marouf, **Q.A. Al-Haija**, A. Al-Shu'aibi, '*Performance Analysis of 128-bit Modular Inverse Based Extended Euclidean Using Altera FPGA Kit*', 6<sup>th</sup> International Symposium on Emerging Information, Communication and Networks (EICN-2019)/Procedia Computer Science(PCS), Elsevier, Vol.160, 2019.
22. I. Marouf, M. M. Asad, **Q.A. Al-Haija**, A. Al-Shu'aibi, '*Cost effective FPGA Implementation of Right-to-Left Modular Exponentiation with NAF-Representation*', 6<sup>th</sup> International Symposium on Emerging Information, Communication and Networks (EICN-2019)/Procedia Computer Science(PCS), Elsevier, Vol.160, 2019.
23. **Q.A. Al-Haija**, et. al., '*Pipelined Implementation of Millar Rabin Primality Tester Using Altera FPGA Kit*', 7<sup>th</sup> International Symposium on Security in Computing and Communications (SSCC'2019)/ Communications in Computer and Information Science Series(CCIS), Springer, 2019.
24. I. Marouf, M. Asad, A. Bakhuraiba, **Q.A. Al-Haija**, '*Cost Analysis Study of Variable Parallel Prefix Adders Using Altera Cyclone IV FPGA Kit*', Int. Conf. on Electrical & Computing Technologies & Applications(ICECTA), IEEE, 2017.
25. **Q.A. Al-Haija**, G. Manasrah, M. Al-Tarayrah, '*Communication power analysis of applying MQV Key agreement scheme for wireless sensor network*', International Conference on Intelligent Techniques in Control, Optimization & Signal Processing (INCOS), IEEE, 2017.
26. **Q.A. Al-Haija**, H. Enshasy, A. Smadi, '*Estimating Energy Consumption of Diffie Hellman Encrypted Key Exchange (DH-EKE) for Wireless Sensor Network*', International Conference on Intelligent Techniques in Control, Optimization & Signal Processing (INCOS), IEEE, 2017.
27. **Q.A. Al-Haija**, M. Al-Ja'fari, M. Smadi, '*A Comparative Study up to 1024-bit Euclid's GCD algorithm FPGA Implementation and Synthesizing*', 5<sup>th</sup> International Conference on Electronic Devices, Systems and Applications, IEEE, 2016.
28. **Q.A. Al-Haija**, N. A. Jebril, A. Al-Shu'aibi, '*Implementing variable length pseudo random number generator (PRNG) with fixed high frequency (1.44 GHz) via Vertix-7 FPGA family*', International Conference on Network Security & Communication Engineering (NSCE), CRC Press/Taylor Francis, 2015.

29. **Q.A. Al-Haija**, et. al., '*A Tiny RSA Cryptosystem Based on Arduino Micro-controller Useful for Small Scale Networks*', 9<sup>th</sup> Int. Conf. on Future Networks and Communications (FNC-2014)/Procedia Computer Science, Elsevier, 2014.
30. **Q.A. Al-Haija**, et. al., '*Efficient FPGA Implementation of RSA Coprocessor Using Scalable Modules*', 9<sup>th</sup> International Conference on Future Networks and Communications (FNC-2014)/Procedia Computer Science (PCS), Elsevier, 2014.
31. M. Smadi, **Q.A. Al-Haija**, '*Precise Error Rate Analysis of MIMO System with Interference and Imperfect Channel State Information*', 27<sup>th</sup> Canadian Conference on Electrical & Computer Engineering (CCECE), IEEE, 2014.
32. **Q.A. Al-Haija**, M. Smadi, '*An Algorithm and Hardware Architecture for  $GF(2^N)$  Elliptic Curve Cryptography by Adopting Projective Binary Hessian Elliptic Curves*', Secure Abu Dhabi'2013 Conf., Inspiring a Safe Secure Cyber World (ISC)<sup>2</sup>, 2013.
33. M. Al-Tarayrah, **Q.A. Al-Haija**, '*LMS-based Equalization in Filter Bank Multicarrier Wireless Communication Systems*', Int. Conf. on Digital Information Processing, E-Business & Cloud Computing (DIPECC), SDWIC, 2013.
34. **Q.A. Al-Haija**, et. al., '*Hardware and Software Simulation for Classical Cryptosystems*', 4<sup>th</sup> International Conference on Emerging Ubiquitous Systems & Pervasive Networks (EUSPN)/Procedia Computer Science(PCS), Elsevier, 2013.
35. **Q.A. Al-Haija**, et. al., '*Hardware an 8-Bit Scientific Calculator Based Intel 8086 Virtual Machine Emulator*', 4<sup>th</sup> Int. Conf. on Emerging Ubiquitous Systems & Pervasive Networks (EUSPN-13)/Procedia Computer Science, Elsevier, 2013.
36. **Q.A. Al-Haija**, et. al., '*An Engineering Design of 4-Bit Special Purpose Micro-programmed Processor*', 4<sup>th</sup> Int. Conf. on Emerging Ubiquitous Systems & Pervasive Networks (EUSPN-13)/Procedia Computer Science(PCS), Elsevier, 2013.
37. **Q.A. Al-Haija**, M. Shwehdi, '*A Power Line Data Communication Interface Using Power Line Modem in Home Automation*', Saudi Electricity Efficiency Forum & Exhibition (SEEFE), Ministry of Electricity, Saudi Arabia, 2012.
38. O. Melhem, **Q.A. Al-Haija**, A. Al-Badawi, '*Performance Evaluation of Probabilistic Key Management Approaches for Wireless Sensor Networks*', 1<sup>st</sup> Int. Conference on Information and Communication Systems (ICICS), IEEE, 2009.

**LIST OF  
JOURNAL  
PAPERS**

1. **Q. Abu Al-Haija**, A.A. Smadi, M.F. Allehyani, '*Meticulously Intelligent Identification System for Smart Grid Network Stability to Optimize Risk Management*', Energies, MDPI, Vol. 14 (21), 2021.
2. **Q. Abu Al-Haija**, A.A. AlSulami, '*High Performance Classification Model to Identify Ransomware Payments for Heterogeneous Bitcoin Networks*', Electronics, MDPI, Vol. 10, 2021.
3. **Q. Abu Al-Haija**, A Ishtaiwi, '*Machine Learning Based Model to Identify Firewall Decisions to Improve Cyber-Defense*', International Journal on Advanced Science Engineering and Information Technology, Vol. 11, Published by IN-SIGHT, 2021.
4. A.A. Smadi, B.T.Ajao, B.K. Johnson, H. Lei, Y. Chakhchoukh, **Q. Abu Al-Haija**. '*A Comprehensive Survey on Cyber-Physical System Testbed Architectures and Standards*', Electronics, MDPI, Vol. 10, 2021.
5. A. Ishtaiwi, **Q. Abu Al-Haija**. '*Dynamic Initial Weight Assignment for MaxSAT*', Algorithms. 2021; 14(4):115, MDPI, 2021
6. **Q. Abu Al-Haija**. '*A Stochastic Estimation Framework for Yearly Evolution of Worldwide Electricity Consumption*', Forecasting, MDPI, Vol. 3, 2021

7. **Q. Abu Al-Haija**. ‘*A Machine Learning Based Predictive Model for Time-Series Modelling and Analysis*’, To Appear, International Journal of Spatio-Temporal Data Science, Inderscience, 2021.
8. **Q. Abu Al-Haija**, S. Zein-Sabatto. ‘*An Efficient Deep-Learning-Based Detection and Classification System for Cyber-Attacks in IoT Communication Networks*’, Electronics, MDPI, Vol. 9, 2020.
9. **Q.A. Al-Haija**, K. Al Nasr. ‘*Forecasting Model for the Annual Growth of Cryogenic Electron Microscopy Data*’, Computational Advances in Bio and Medical Sciences, Lecture Notes in Computer Science (LNCS), Vol. 12029, Springer, 2020.
10. **Q.A. Al-Haija**, M. Asad, I. Marouf, M. Smadi. ‘*Design Alternatives of Euclidean Greatest Common Divisor with Enhanced Architecture*’, International Journal of Computer Aided Engineering and Technology (IJCAET), Inderscience, Vol.12(4), 2020.
11. K. Al Nasr, **Q.A. Al-Haija**, ‘*Forecasting the growth of structures from NMR and X-Ray Crystallography experiments released per year*’, Journal of Information & Knowledge Management (JIKM), World Scientific Publishing, Vol.19(1), 2020.
12. **Q.A. Al-Haija**, Ghandi F. Manasrah. ‘*Development of Breast Cancer Detection Model Using Transfer Learning of Residual Neural Network*’, American Journal of Science & Engineering (AJSE), By Society for Makers, Artists, Researchers and Technologists (SMART), Vol.1(3), 2020.
13. H. Enshasy, **Q.A. Al-Haija**, et. al, ‘*A Comprehensive Construction of Hydrogen-Hydrogen-Oxygen (HHO) Cell as Renewable Energy Storage*’, WSEAS Transactions on Systems, World Sci. Eng. Academy & Society, 2020.
14. **Q.A. Al-Haija**, et. al, ‘*Implementing a lightweight Schmidt-Samoa Cryptosystem for Sensory Communications*’, International Journal on Smart Sensing and Intelligent Systems (IJSSIS), Exeley Inc. Publisher, USA, Vol.12(2), 2019.
15. **Q.A. Al-Haija**, Q. Mao, K. Al Nasr, ‘*Forecasting the Number of Monthly Active Facebook and Twitter Worldwide Users Using ARMA Model*’, Journal of Computer Science (JCS), Science Publications, Vol.15(4), 2019.
16. **Q.A. Al-Haija**, et. al., ‘*The Development of Wireless Sensor Network for Air Quality Monitoring using Buck-Boost Converter*’, Journal of Information Technology and Computer Engineering (JITCE), Andalas University, Vol.3(2), 2019.
17. A. Busuhail, A. Hulaibi, Z. Khalaf, N.Jebril, **Q.A. Al-Haija**, ‘*A Comprehensive Model Driven Secure Mobile Application for KFU Email System*’, Journal of Computer and Robotics (JCR), Azad University, Vol.12(1), 2019.
18. M. Asad, I. Marouf, **Q.A. Al-Haija**, ‘*Radix-8 Design Alternatives of Fast Two Operands Interleaved Multiplication with Enhanced Architecture*’, International Journal of Advanced Network, Monitoring and Controls (IJANMC), Exeley Inc. Publisher, USA, Vol.4(2), 2019.
19. H. Enshasy, **Q.A. Al-Haija**, et. al, ‘*A Comprehensive Design of Unmanned Ground Search an Rescue Robot*’, Journal of Information and Computing Science (JIC), World Academic Press, Vol. 14 No. 1, Pp 52-80, 2019.
20. N.A. Jebriil, H. Alzoubi & **Q.A. Al-Haija**, ‘*Recognition of Handwritten Arabic Characters Using Histograms of Oriented Gradient (HOG)*’, Pattern Recognition and Image Analysis (PIRA), Springer, Vol. 28(2), 2018.
21. **Q.A. Al-Haija** & S.M.S Ahmad, ‘*Fast Radix-2 Sequential Multiplier Using Kintex-7 FPGA Chip Family*’, The Open Cybernetics & Systemics Journal (OCSJ), Bentham Open publisher, Vol.12, 2018.
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