Qasem S. Abu Al-Haija, PhD, Electrical & Computer Engineering
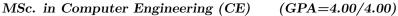
Address: Department of Cybersecurity, Jordan University of Science and Technology (JUST),Irbid, Jordan.
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EDUCATION

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　　　　　　　　　　Oct/2023 - Current
Jordan University of Science and Technology, Department of Cybersecurity.
∗ Conducting Research in areas of AI and Cybersecurity.
∗ Course developed and Taught (So Far): Fundamentals of IT, Reverse Engineering, Cryptography, Assembly Language Programming).

Assistant Professor　　　　　　　　　　Sep/2021 - Sep/2023
Princess Sumaya University for Technology, Department of Cybersecurity.
∗ Conducting Research in areas of AI and Cybersecurity.
∗ Course developed and Taught (So Far): Fundamentals of Cybersecurity, Information Systems Security, Secure Assembly Coding, Malware Analysis and Reverse Engineering, Data Communications and Networking, Database Systems, Database Systems Lab, Data Communication & Network Security(BSc + MSc).

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.
∗ Course developed & Taught: Computer Organization & Architecture, Data Communication & Networks, Fundamentals of Data Science, Big Data, Artificial Intelligence.

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, Jord*an
∗ 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.

AWARDS AND HONORS

During my career, I have got the following awards and recognition:
∗ Received several research funds by MDPI publisher, 2021-2022.
∗ 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.

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 2015-2016.
∗ 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 2011-2012.
∗ Applying Hessian Curves in parallel to improve ECC Scalar Multiplication Hardware Prince Muqrin Chair for IT Security, King Saud University, Saudi 2009-2010.

Co-Investigator in the following projects:

∗Advanced Intelligent Classification Model to Detect Cyberattacks Targeting Autonomous Vehicles, Deanship of scientific research, King Abdulaziz University., Saudi 2021-2022.
∗ MIMO technique to mitigate negative effects of Co-channel interference in wireless cellular systems, Deanship of scientific research, King Faisal Uni., Saudi 2014-2015.
∗ Energy Conservation Strategies for Heat Dissipation and HVAC Systems in KFU Buildings, Deanship of Scientific Research, King Faisal University, Saudi 2012-2013.
∗ Efficient Cryptographic Processor for Internet and Wireless Security Based on Elliptic Curve Cryptography, Ministry of higher education, Jordan 2010-2011.

SELECTED PUBLICATIONS

Q. Abu Al-Haija, M. Al Fayoumi, *'An intelligent identification and classification system for malicious uniform resource locators (URLs)'*, Neural Computing and Applications (NCAA), Springer, 2023.

Q. Abu Al-Haija, M. AlOhaly, M. Odeh, *'A Lightweight Double-Stage Scheme to Identify Malicious DNS over HTTPS Traffic Using a Hybrid Learning Approach'*, Sensors, MDPI, 2023.

Q. Abu Al-Haija, A. Al Badawi, *'High-performance intrusion detection system for networked UAVs via deep learning.'*, Neural Computing and Applications (NCAA), Springer, 2022.

Q. Abu Al-Haija, A. Al Badawi, *'Boost-Defense for Resilient IoT Networks: A Head-to-Toe Approach'*, Expert Systems, Wiley, 2022.

Q. Abu Al-Haija, *'Top-Down Machine Learning Based Architecture for Cyberattacks Identification and Classification in IoT Communication Networks'*, Frontiers in Big Data: Cybersecurity and Privacy, Frontiers, 2022.

Q. Abu Al-Haija, M. Krichen,W. Abu Elhaija, *'Machine-Learning-Based Darknet Traffic Detection System for IoT Applications'*, Electronics, MDPI, Vol. 11(4), 2022.

S. Zidi, A. Mihoub, S.Qaisar, M. Krichen, **Q. Abu Al-Haija**, *'Theft detection dataset for benchmarking and machine learning based classification in a smart grid environment'*, Journal of King Saud University-Computer and Information Sciences, Elsevier, In Press, 2022.

EDITORIAL ACTIVITIES	∗ **Guest Editor**, Special Issue: Artificial Intelligence Solutions For Decision Making In Robotics. Frontiers in Robotics and AI, Frontiers, 2022. ∗ **Session Chair**, Session SD04: Smart City Architecture and its Applications. Fourth IET Smart Cities Symposium, IET, 2021 and 2022. In Robotics. Frontiers in Robotics and AI, Frontiers, 2022. ∗ **Session Chair**, IEEE International Conference on Computing, Communication, and Intelligent Systems, IEEE, 2022.
TECHNICAL MEMBER:	*Served as a TCP member for several conferences such as*: ∗ 14th Int. Conf. on Computational Collective Intelligence,Springer, 2022. ∗ 7th Int. Conf. On Electrical & Computing Technologies & Applications, IEEE, 2022. ∗ 6th Int. Conf. on Computer Applications and Information Security, Emerald, 2022. ∗ 6th IET SMART CITIES SYMPOSIUM, IEEE + IET, 2021/2022. ∗ IEEE International IOT, Electronics and Mechatronics Conference, Canada, 2020/2021/2022. ∗ International Conference On Data Analytics For Business And Industry,IEEE, 2021/2022. ∗ International Conference on Decision Aid Sciences and Applications, IEEE, 2022. ∗ Int. Conf. Emerging Trends in Computing & Engineering Applications, IEEE, 2021. ∗ IEEE Int. Conference on Internet of Things and Embedded Intelligence, 2020. ∗ IEEE 4th Int.Conference On Computer Applications and Information Security, 2020. ∗ 37th IEEE International Conference on Computer Design (ICCD), UAE, 2019. ∗ IEEE Int. Conference on Electrical, Computing Technologies & Applications, 2017/2019. ∗ 5th Int. Conference on Cyber Security, Cyber Welfare and Digital Forensic, 2017. ∗ 2nd Annual Int. Conference on Information System and Artificial Intelligence, 2017. ∗ 4th Int. Conference on Education, Technologies and Computers, Ethiopia, 2017. ∗ 3rd Int. Conference on Information Security and Cyber Forensics, Slovakia, 2017. ∗ IEEE 5th Int. Conference on Electronic Devices, Systems & Applications, UAE 2016. ∗ 20th World Multi-Conference on Systemic, Cybernetics and Informatics, USA, 2016. ∗ IEEE Jordan Conference on Applied Electrical Eng. & Computing Tech., 2015. ∗ 3rd Int. Conference on Cyber Security, Cyber Warfare & Digital Forensic, 2014. ∗ Int. Conference on Computer Security and Digital Investigation, Malaysia, 2014.
JOURNAL REVIEWER:	*Served as a reviewer for several journals such as*: ∗ IEEE transactions on computers / IEEE/ 2022. ∗ Engineering Applications of Artificial Intelligence / Elsevier/2022. ∗ Computers in Biology and Medicine / Elsevier/2021. ∗ CNS Neuroscience & Therapeutics / Wile/2022. ∗ IET wireless sensor systems / IET/2021. ∗ Computers, Materials, and Continua/ Tech Science Press /2022. ∗ Int. Journal of Information Technology & Decision Making / World Scientific/2022. ∗ MDPI Journals: Sensors, Cryptography, Sustainability, Applied Sciences/2021-2022. ∗ MDPI Journals: Symmetry, Entropy, Energies, Electronics,Mathematics /2021-2022. ∗ Journal of computer networks and communications / Hindawi/2022. ∗ Complexity / Hindawi /2022. ∗ Journal of mobile information systems / Hindawi /2022. ∗ Wireless Networks / Springer /2022. ∗ Journal of reliable, intelligent environments / Springer /2022. ∗ Frontiers Robotics and AI / Frontiers /2022. ∗ Cluster Computing / Springer /2022. ∗ Computer Systems Science and Engineering / Tech Science Press /2022. ∗ Connection Science / Tylor & Francis /2022. ∗ International Journal of Electrical and Computer Engineering / IAES /2021. ∗ Bulletin of Electrical Engineering and Informatics /2020. ∗ Notes on Number Theory and Discrete Mathematics (NNTDM), Bulgaria, 2020.

* International Journal of Computing and Digital Systems, University of Bahrain, 2019.
* Microprocessors and Microsystems Journal, Elseveir, 2018.
* IEEE ACCESS Journal:multidisciplinary, open access journal of the IEEE, 2018.
* International Journal of Embedded Systems(IJES), Inderscience, 2018.
* International Journal of Electronics and Communications, Elsevier, 2016.
* Journal of Information Security and Applications (JISA), Elsevier, from 2013.

APPRECIATION LETTERS

During my career, I have got appreciation certificates for the following:
* Organized a workshop *Arduino μcontroller* 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: 4th *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 (ICSES), 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.