A RESUME OF: QASEM SALEH ABU AL-HAIJA, ELECTRICAL AND COMPUTER ENGINEERING, M.SC.

Lecturer and researcher of Electrical & Computer Engineering, College of Engineering, King Faisal University, Al-Hasa, 31982, Saudi Arabia, P. O. Box 380.

qalhaija@kfu.edu.sa, eng.qasem1982@gmail.com

Mobile: +966548300432 (Saudi) and +962799535945 (Jordan)

Biography-- **Eng. Qasem Abu Al-Haija is a lecturer and Researcher of Electrical and Computer Engineering at King Faisal University. He is a Jordanian resident (Married) born on July-16-1982 and proficient in both languages Arabic and English. Eng. Abu Al-Haija received his B.S. in Electrical and Computer Engineering from Mu'tah University in February of 2005. Then he worked as a network engineer in a leading institute at KSA as well as a lecturer before he joined the graduate program at Jordan University of Science & Technology (JUST) in September 2007 where received his M.S. degree in Computer engineering in December 2009.**

Keywords (Research Interests) -- **Information Security & Cryptography, Elliptic Curves Cryptography, Crypto processor Design and FPGA design, Computer Arithmetic & Finite Fields, Wireless Sensor Networks.**
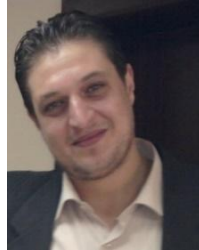
I. EDUCATIONAL QUALIFICATIONS

A. Master Degree (M.Sc.): Computer Engineering.

– Jordan University of Sciences and Technology, SEP-2007 to DEC-2009.
– Thesis: "Efficient Algorithms for ECC Cryptography using new Coordinates Systems" Dec/2009, Jordan.

B. Bachelor's Degree (B.Sc.): Computer Engineering.

– Mu'tah University , SEP-2000 TO JAN-2005
– Graduation Project: "Distributed Digital Image Processing Via Java and VB.Net", May/2004, Jordan.

II. PRACTICAL EXPERIENCES

A. Lecturer and Researcher

– King Faisal University, College Of Engineering, Electrical Engineering Department, Saudi Arabia - Mar/2011 – Current.
– Lecturer: taught several courses: Microprocessors, Logic Design, Numerical Methods, Networks and others.
– Lab Engineer: taught and prepare lab manuals for: digital logic design and microprocessor systems.
– Researcher in Information Security and Cryptography, Networks, WSN and FPGA Design for Crypto-processors.
– Member of administration committees: Scientific Research, IT & Knowledge Management, Public Relation, Professional Development, Action plans Improvements, EE Accreditation, EE Academic & Student Affairs, EE Industrial Relations, EE Recruitment, EE Curriculum and Workplace Safety Inspection.
– Member of Electrical Engineering Club.
– Arranged Field Trips for EE Students as enhancement to their practical exposure.

B. Consultant and Researcher

– University Putra Malaysia (UPM), Dept. of Info. Sys and Mathematical Research, Jan/2010 - Jan/2012 (Distance Work)
– Main researcher/consultant: Assisting Prof. Azmi Jafar in supervising PhD thesis for Mr. Mohamad khatib.
– During this period, we have published 5 papers in the field of Elliptic Curves Cryptography.

C. Teaching and Research Assistant

– Jordan University of Science & Technology (JUST), Sep/2009 - Mar/2010 (Part Time).
– Assisting the faculty members of computer engineering department in the teaching and research.

D. Lecturer and Labs Supervisor

– GRNADA College for Technology, Department of Information Technology, Jordan, Sep/2008 - Sep/2009
– Courses taught includes: Communication & Networks, Introduction to Operating Systems, visual Basic for Applications, graduation project, Computer Skills, Computer Programming.
– Labs supervisor and Network administrator: managing the Internet server and Database server.
– Network security/ solutions of the college and computer labs.

E. Lecturer

– Jordan College for Sciences & Technology, Department of Management Information Systems (MIS), Sep/2007- Sep/2008
– Courses taught include: Computer Networks, C++, Java programming I, Visual Basic and Database Systems & SQL.

F. Instructor

– Technical College of Hafer El-Batin, GOTEVOT, Department of Computer Tech, Saudi Arabia, Aug/2005 - Aug/2007.
– Courses and Labs taught include: Fundamentals of Electrical and Electronic Systems, Digital Circuits, Computer HW & SW, Computer Networks, Computer Terminals, Computer Maintenance and Promotion, Computer Applications,

Computer Programming, Oracle Database, Fundamentals of OSs.

III. TRAINING COURSES (ATTENDED)

– Cisco Certified Network Associate (CCNA) Certified.
– Java Programming Language (Java applications & applets).
– Windows 2000 Server – Installation and Managing.
– Computer maintenance & Troubleshooting (H/W & S\W).
– Web Design Applications via Adobe Flash and MS-Front Page.
– Internet Security such as firewalls and intrusion detection.
– Systems Analysis using MC-Design and MS-Visio professional.
– Web Development via ASP.NET 2003 and SQL Server 2000.
– Microsoft C#.net 2003 with SQL Server 2000.
– ICDL (International Computer Driving License).
– Workshop on Wireless Communication and Mobile Networks.
– The Quality of Administration Planning and Management.
– Electronic Library & its Role in the Service of Scientific Research.
– Engineering Higher Education Learning Outcomes Assessment.
– Developing Research Abilities: Idea & Research Management.
– Academic Workshops: Measuring Student Learning, Thinking Compass, Class Management, Exams Design.

IV. TRAINING COURSES (DILEVERED)

– Cisco Certified Network Associate - CCNA Course.
– CompTIA A+ Course.
– Image Processing Course via-Adobe Photoshop Cs2 Me.
– Video Processing Course via Adobe Premiere 7.0.
– Graphic Design Course via- Adobe Illustrator Cs2 Me.
– ICDL Course in 40 hours.
– Webpage Design via FrontPage 2003.
– Electronic sheets via Microsoft Excel 2013.
– Introduction to Cryptography and Steganography.
– Pneumatic Systems and Applications.
– Distributed Control Systems (DCS).

V. RECOGNITIONS

– The first of my batch of graduate students in my M.Sc. in computer engineering with a GPA of 90.2%.
– Published 1 Book, 15 research papers, 9 Conference papers and secured six funded projects during my career.
– JUST Scholarship for TA/RA in Jordan University of Science and Technology due to the superior GPA.
– A Letter of recognition by the dean of engineering at KFU, Dr. Abdulmohsen Al-Arfaj.

VI. LIST OF PUBLICATIONS

A. Journal Papers

[1]. **Q. Abu Al-Haija** & A. Al-Badawi, "Cost-Effective Design for Binary Edwards Elliptic Curves Cryptoprocessor Over GF (2N) Using Parallel Multipliers & Architectures", International Journal of Information and Computer Security (IJICS), Inderscience Publishers, UK, V.5 (3) 2013.

[2]. **Q. Abu Al-Haija,** M. Shwehdi, & M. Banat, "Evaluation Metrics for Wireless Sensor Network Security: Algorithms Review and Software Tool", Journal of Computer Science (JCS), Science Publications, USA, V.9 (5) 2013.

[3]. **Q. Abu Al-Haija**, et. al., "An Undergraduate Design Experience in Digital Logic Design Course of Special Purpose Arithmetic Logic Unit Using Multisim, Ultiboard and Print Circuit Board", International Education Studies (IES), Canada, V.6 (3) 2013.

[4]. A. Al-Badawi & **Q. Abu Al-Haija**, "IRS for Computer Character Sequences Filtration: a new software tool and algorithm to support the IRS at tokenization process", International Journal of Advanced Computer Science and Applications (IJACSA), Science and Information Organization, USA, V.4 (1) 2013.

[5]. M. Shwehdi, F. Ismail, and **Q. Abu Al-Haija**, "Investigating University Personal Computers (PC) Produced Harmonics Effect on line Currents" Accepted for publication at Journal of Energy and Power Engineering, by International Science Press, July, 2012.

[6]. **Q. Abu Al-Haija** & L. Tawalbeh, "Efficient Algorithms & Architectures for Elliptic Curve Crypto-Processor Over GF (P) Using New Projective Coordinates Systems" Journal of Information Assurance and Security (JIAS), Dynamic Publishers, USA, V.6 (1) 2011.

[7]. **Q. Abu Al-Haija**, "Toward Secure Non-Deterministic Distributed Wireless Sensor Network Using Probabilistic Key Management Approaches," Journal of Information Assurance and Security, Dynamic Publishers, USA, V.6 (1) 2011.

[8]. **Q. Abu Al-Haija** et. al. "Choices On Designing GF (p) Elliptic Curve Coprocessor benefiting from Mapping Homogeneous Curves in Parallel Multiplications," International Journal on Computer Science and Engineering (IJCSE), Engg Journals Publications, Singapore, V.3 (2) 2011.

[9]. L. Tawalbeh and **Q. Abu Al-Haija** "Enhanced FPGA Implementations for Doubling Oriented and Jacobi-Quartics Elliptic Curves Cryptography" Journal of Information Assurance and Security (JIAS), Dynamic Publishers, USA, V.6 (3) 2011.

[10]. M. Khatib, **Q. Abu Al-Haija** and R. Mahmod, "Performance Evaluation of Projective Binary Edwards Elliptic Curve Computations with Parallel Architectures," Journal of Information Assurance and Security (JIAS), USA, V.6 (1) 2011.

[11]. M. Khatib, **Q. Abu Al-Haija** and A. Jaafar, "Hardware Architectures & Designs for Projective Elliptic Curves Point

Addition Operation Using Variable Levels of Parallelism," International Review on Computers and Software (IRECOS), Praise Worthy Prize, Italy, V.6 (2) 2011.

[12]. **Q. Abu Al-Haija** and M. Khatib "Parallel Hardware Algorithms & Designs for Elliptic Curves Cryptography to Improve Point Operations Computations" Journal of Information Assurance and Security (JIAS), USA, V.5 (4) 2010.

[13]. **Q. Abu Al-Haija**, et. al., "Efficient New Design and Verification of Sign-Digit-Adder for Two Symmetric Redundant Radix-4 Numbers," International Journal of Computer Science and Engineering (IJCSE), Engg Journal Publications, Singapore, V.2 (4) 2010.

[14]. F. Mehaya, **Q. Abu Al-Haija** and L. Tawalbeh, "Applying Hessian Curves in Parallel to Improve Elliptic Curve Scalar Multiplication Hardware" International Journal of Security and Its Applications (IJSIA), Science and Engineering Research Support Center, Korea, V.4 (2) 2010.

[15]. A. Q. Al-Badawi, A. M. Baset, and **Q. S. Abu Al-Haija**, "A Novel Digital Adder Design Based on Residue Number System with Special Set of Moduli $\{2^{n+1}, 2^n, 2^{n-1}\}$", International Journal of Research and Review in Applied Science, Academic Research Publishing Agency, Pakistan, V.4 (1) 2010.

B. Conference Papers

[1]. M. Shwehdi and **Q. Abu Al-Haija**, "Conservation Strategies in Hot-Humid Environment in Saudi Arabia", IEEE PES Asia-Pacific Power & Energy Engineering Conference, Hong Kong.

[2]. **Q. Abu Al-Haija** and M. Smadi, "An Algorithm and Hardware Architecture for GF (2N) Elliptic Curve Cryptography by Adopting Projective Binary Hessian Elliptic Curves", Secure Abu Dhabi'2013 Conference (SAD 2013).

[3]. M. Al-Tarayrah and **Q. Abu Al-Haija**, "LMS-based Equalization in Filter Bank Multicarrier Wireless Communication Systems", International Conference on Digital Information Processing, E-Business and Cloud Computing (DIPECC2013), UAE, 2013.

[4]. **Q. Abu Al-Haija**, et. al., "Hardware and Software Simulation for Classical Cryptosystems ", 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN-13), Ontario, Niagara Falls, 21-24, Oct-2013.

[5]. **Q. Abu Al-Haija**, et. al., "Hardware An 8-Bit Scientific Calculator Based Intel 8086 Virtual Machine Emulator ", 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN-13), Ontario, 2013.

[6]. **Q. Abu Al-Haija**, et. al., "An Engineering Design of 4-Bit Special Purpose Microprogrammed Processor ", 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN-13), Ontario, 2013.

[7]. **Q. Abu Al-Haija**, et. al., " Case Study: Monitoring of AIR Quality in King Faisal University Using Microcontroller and WSN ", 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN-13), Ontario2013

[8]. **Q. Abu Al-Haija** and M. Shwehdi, "A Power Line Data Communication Interface Using Power Line Modem In Home Automation"-Saudi Electricity Efficiency Forum and Exhibition, Riyadh, 2012.

[9]. O. Melhem, **Q. Abu Al-Haija**, and A. Al-Badawi, "Performance Evaluation of Probabilistic Key Management Approaches for Wireless Sensor Networks," 1st International Conference in Information & Communication Systems ICICS, Jordan, 2009.

C. Books

– **Q. Abu Al-Haija**, "Efficient Algorithms for Elliptic Curve Cryptography using New Coordinates Systems" by LAP LAMBERT Academic Publishing, ISBN: 978-3-659-26018-6, https://www.lap-publishing.com.

VII. FUNDED RESEARCH PROJECTS

– **MOL PROJECT**
Single-Investigator, "Case Study: Monitoring of AIR quality in King Faisal University using Microcontroller and WSN", Ministry of Labor, Saudi Arabia, 2013.

– **KFU PROJECT**
Co-Investigator, "Energy Conservation Strategies for Heat Dissipation and HVAC Systems in KFU Buildings", King Faisal University, Deanship of Scientific Research, 2013.

– **KFU PROJECT**
Co-Investigator, "Multi-input Multi-output Technique to Mitigate the Negative Effects of Co-Channel Interference in Wireless Cellular Systems", King Faisal University, Deanship of Scientific Research, 2012.

– **KFU PROJECT**
Single-Investigator: "Cost Effective Design for Elliptic Curve Crypto-processor over GF (2N)", Funded by Deanship of Scientific Research, King Faisal University (KFU), Saudi, 2011.

– **JUST PROJECT**
Co-Investigator: "Efficient Cryptographic Processor for Internet and Wireless Security Based on Elliptic Curve Cryptography" Funded by ministry of higher education and Jordan university of sciences and technology (JUST), Jordan, 2010.

– **PMC PROJECT**
Principle-Investigator: "Applying Hessian Curves in Parallel to Improve Elliptic Curve Scalar Multiplication Hardware", Funded by Prince Muqrin Chair (PMC) for IT Security, King Saud University, Saudi Arabia, 2009.

VIII. REVIEWER

– Journal of Information Security and Applications (JISA), Elsevier, from 2013.

– International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'13), TUNISIA.

- 4th Scientific Conference for Students of Higher Education, (SCSHE'13), Saudi Arabia.
- International Conference on Digital Information Processing, E-Business & Cloud Computing (DIPECC2013), Dubai.
- 3rd International Conference on Cyber Security, Cyber Warfare, & Digital Forensic (CyberSec2014), Lebanon.
- International Conference on Digital Security and Forensics (DigitalSec2014), Czech Republic.
- International Conference on Computer Security and Digital Investigation (ComSec2014), Malaysia.
- International Conference on Information Security and Cyber Forensics (InfoSec2014), Malaysia.

IX. PROFESSIONAL MEMBERSHIPS

- Member of the Society of Digital Information and Wireless Communications (SDIWC) – From Nov/2013.
- Member of IEEE Branch at College of Engineering at King Faisal University – From Jun/2012.
- Member of the World Academy of Science, Engineering and Technology (WASET) – From Dec/2009.
- Member of Jordanian Institute for Engineering (JIA) – From Feb/2005.

X. MASTER COURSES

- High Performance Computer Architecture.
- Advanced Computer Networks.
- Advanced Operating Systems.
- Advanced Digital Arithmetic.
- Advanced Computer Algorithms.
- Multimedia Networking and Communication
- Networks and Information Security.
- Information Retrieval Systems.
- Seminar in Computer Engineering.

XI. GENERAL SKILLS

- Excellent Networking Skills: installation, troubleshooting, routing and switching.
- Excellent Network administration Skills: ISA, Proxy, Backup and Security Servers.
- Excellent Operating Systems Skills: Windows (all Versions), Win 2003 Server, UNIX OS and Linux.
- Excellent knowledge in hardware and FPGA design via VHDL.
- Excellent knowledge in Hardware simulation tools: ModelSim6.5g, Multisim 11, EMU 8086 Emulator.
- Excellent knowledge in Hardware verification & testing tools: Synthesizer ISE and MDA-Win8086.
- Excellent knowledge in writing and designing technical reports and scientific papers using Latex.
- Excellent knowledge in projects planning and modeling using: MS-Visio 2003, Mind Manager 2008.

- Very good programming skills: Assembly, Java, C++, SQL, Visual Basic and VBA.
- Very good knowledge in graphic design applications: Adobe Photoshop Cs2 Me, Illustrator Cs2 Me.
- Very good knowledge in web design applications: MS-FrontPage, and MS-publisher.
- Very good knowledge in mathematical verification tools: Maple soft 12.5 for Cryptography and Matlab.
- Very Good Experience in ABET requirements and course outcomes assessment for accreditation purposes.

XII. REFERENCES

- **Prof. Lo'a i Tawalbeh**
  Computer Engineering, Faculty of Computer and Information Technology, Jordan University of Science & Technology, Tel: +962-2-7201000 Ext 22517, Email: tawalbeh@just.edu.jo.
- **Prof. Amjad Omar**
  Chairman of Electrical Engineering, College of Engineering, King Faisal University, P.O Box 380, Al-Ahsa, 31982, Mob. (KSA): +966-551970874, Email: amomar@kfu.edu.sa.
- **Prof. Mahmoud Smadi**
  Electrical Engineering, College of Engineering, King Faisal University, P.O Box 380, Al-Ahsa, 31982, Mob. (KSA): +966-548821321, Email: msmadi@kfu.edu.sa.
- **Prof. Mohamed Shwehdi**
  Electrical Engineering, College of Engineering, King Faisal University, P.O Box 380, Al-Ahsa, 31982, Mob. (KSA): +966-503855062, Email: hamdmohd@yahoo.com.
- **Prof. Eyad Abu-Nada**
  Mechanical Engineering Department, College of Engineering, Hashemite University, Mob. (JOR): +962-786-880692, Email: eiyad_abunada@yahoo.com.