Yazan M. Al-Issa, M.Sc., MBA, Ph.D.

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SYNOPSIS

Dr. Yazan M. Al-Issa is a seasoned Data Scientist and an Associate Professor of Computer Engineering at Yarmouk University (YU), Irbid, Jordan. He served as the chair of the Computer Engineering Department at YU between 2018-2020. He earned his Bachelor of Science (B.Sc.) in Electrical Engineering from UAE University in 1996. He also obtained an M.Sc. in Electrical Engineering from Louisiana State University (LSU) in 1999 and a Master's in Business Administration (MBA) from Clarkson University (CU) in 2012. In 2014, he received his Ph.D. in Electrical and Computer Engineering from Clarkson University (CU), Potsdam, New York. Dr. Al-Issa has a strong background in multiple facets of Computer Engineering including data analytics, image processing, and optimized architectures. His current research focuses on Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL), medical imaging, and pattern recognition. He published 12 articles in high-impact journals. Dr. Al-Issa's industry experience includes working with Intel Corporation on the development of the next-generation microprocessor. He is also a senior member of IEEE, and a life member of Eta the Kappa Nu, and Beta Gamma Sigma honor societies.

RELEVANT EDUCATION

2014 **Ph.D. degree in Electrical & Computer Engineering,** *Clarkson University,* Potsdam NY GPA: 3.842
Dissertation: Bioelectronic Tongue: Pattern Recognition for Analyte Concentration Estimation in a Multisensor System

2011 **MBA degree**, *Clarkson University*, Potsdam NY GPA: 3.79
Completed courses in Project Management, Change Management, Quality Management, Six Sigma Green Belt, Management of Technology, and Global Business Strategies

1999 **M.S. degree in Electrical Engineering,** *Louisiana State University,* Baton Rouge LA
Thesis: The Effect of Hot Spots on the Performance of Mesh-based Networks

1996 **B.S. degree in Electrical Engineering,** *UAE University* **(QS World University Ranking #290)**, Al-Ain UAE

PROFESSIONAL SERVICE

- Reviewer, PLOS ONE, Heliyon
- Reviewer, Scientific Reports, Health Informatics
- Reviewer, BMC Medical Informatics and Decision Making
- Reviewer, IEEE Journal of Biomedical and Health Informatics
- Reviewer, IEEE Transactions on Knowledge and Data Engineering
- Reviewer, International Journal of Machine Learning and Cybernetics
- Reviewer, International Journal of Information Technology and Web Engineering (IJITWE)
- TPC Member, 1st International Workshop on Deep and Transfer Learning (DTL'2018)
- TPC Member, ACS/IEEE International Conference on Computer Systems and Applications (AICCSA)
- TPC Member, International Conference on Information and Communication Systems (ICICS)

MANAGERIAL EXPERIENCE

Head Computer Engineering Department, **Yarmouk University,** Irbid, Jordan 2018 – 2020

- Head of all department committees
- Managing 24 faculty, 13 staff, and 556 students (500 B.Sc. | 56 M.Sc.)
- Worked on establishing the Master's program in Computer Engineering (thesis track)

Assistant Dean, **Yarmouk University,** Irbid, Jordan 2018 – 2018

- Internships
- Quality Assurance
- ABET Accreditation

Chapter Counselor, **IEEE-YU Chapter,** Irbid, Jordan 2018 – 2023

- Best chapter in Jordan 2018
- Recruited 100+ new members
- Established the Power & Energy Society (PES)
- Reactivated the Women in Engineering Affinity Group (WIE)
- Established the Aerospace & Electronics Systems Society (AESS)
- IEEE Region 8 Exemplary Student Branch Award 2018
- IEEE Region 8 best EMBS regional student chapter/club Award 2023
- IEEE Region 8 best CS student branch chapter of the year (small) Award 2023
- Hosted the Engineering Student Branch Conference (ESBC) twice
- Hosted the Jordanian Universities participating in the IEEExtreme Programming Competition 12.0

TEACHING & RESEARCH EXPERIENCE

Associate Professor, **Yarmouk University,** Irbid, Jordan 2023 – Present

Assistant Professor, **Yarmouk University,** Irbid, Jordan 2015 – 2023

- Taught the following **undergraduate courses** in the Computer Engineering Department
  CpE576: Artificial Intelligence (Fall 2023)
  CpE230: Digital Logic (Summer 2016)
  CpE231: Digital Logic Lab (Fall 2014)
  CpE596: Selected Topics (Spring 2014)
  CpE452: Software Engineering (Fall 2016, Spring 2016, Fall 2017, Spring 2017, Summer 2017, Fall 2018, Spring 2018, and Fall 2020)
  CpE150: Introduction to Programming (Spring 2015, Spring 2019, Summer 2019, and Fall 2020)
  CpE150: Introduction to Programming Lab (Fall 2014)
  CpE453: Software Engineering and FPGA Lab (Fall 2016, Spring 2016, Fall 2017, Spring 2017, and Fall 2020)
  CpE344: Microprocessors (Summer 2014, and Summer 2015)
  CpE310B&C: Numerical Methods for Engineers (Spring 2014, Fall 2014, Summer 2018, and Fall 2019)
  CpE441: Computer Organization Lab (Spring 2019)
- Taught the following **graduate courses** in the Computer Engineering Department
  CpE615: Machine Learning (Fall 2017)
  CpE653: Advanced Computer Networks (Fall 2018)
  CpE655: Digital System Design using FPGAs (Spring 2018, and Fall 2019)
  CpE691: Selected Topics: Information Theory & Coding (Spring 2016)
  CpE614: Image Processing & Computer Vision (Spring 2014, and Fall 2016)
- Taught the following undergraduate courses in the Industrial Engineering Department
  IE542: Entrepreneurship (Spring 2018)
  IE476: Information Systems (Fall 2018)
  IE361: Project Management (Fall 2018)
  IE454: Statistical Quality Control (Fall 2014, Spring 2015, Fall 2016, Summer 2016, and Spring 2017)
  IE354: Applied Engineering Statistics (Spring 2014, Summer 2014, Fall 2104, Spring 2015, Summer 2015, Spring 2016, Fall 2017, Spring 2017, and Summer 2017)
- Supervised capstone projects and internship students.
- Participated in different department and faculty meetings and committees.

Teaching/Research Assistant, **Clarkson University,** Potsdam, NY 2010 – 2015

- Assisted with research activities for chemometrics and collected data for biometric research and experiments
- Designed experiments to determine glucose concentration in a mixture of interfering analytes
- Used MATLAB to test hypotheses to find the optimal solution
- Collected and analyzed results and made statistical inferences
- Wrote weekly progress reports and journals when applicable
- Graded papers, exams, and homework for a data mining course

Teaching/Research Assistant, **University of Houston,** Houston, TX 2004 – 2007

- Utilized EEGLAB Open Source MATLAB Toolbox to process EEG data
- Learned to design psychophysical experiments and collect data from human subjects
- Supervised ECE undergraduate labs and assisted with the following courses: electrical circuits and computer microarchitecture

Instructor/Teaching Assistant, **Louisiana State University,** Baton Rouge, LA 1998 – 2001

- Wrote the class policy, grading policy, prepared and gave lectures, supervised a teaching assistant, wrote and conducted exams, monitored course-related labs
- Supervised ECE undergraduate labs, graded homework, and exams for logic design and microprocessor-based systems

JOURNAL ARTICLES

[J1] **Yazan Al-Issa**, John Njagi, Stephanie C. Schuckers, Ian I. Suni. "Amperometric Bioelectronic Tongue for glucose determination." *Sensing and Bio-Sensing Research* 3 (2015): 31-37.

[J2] **Yazan Al-Issa**, Mohammad Ashraf Ottom, Ahmed Tamrawi. "eHealth cloud security challenges: a survey." *Journal of Healthcare Engineering* 2019 (2019). https://doi.org/10.1155/2019/7516035

[J3] Roaa Alsharif, **Yazan Al-Issa**, Ali Mohammad Alqudah, Isam Abu Qasmieh, Wan Azani Mustafa, Hiam Alquran. "PneumoniaNet: Automated Detection and Classification of Pediatric Pneumonia Using Chest X-ray Images and CNN Approach." *Electronics*, (10) 23, (2021): 2949.

[J4] Hiam Alquran, Wan Azani Mustafa, Isam Abu Qasmieh, Yasmeen Mohd Yacoub, Mohammed Alsalatie, **Yazan Al-Issa**, Ali Mohammad Alqudah. "Cervical Cancer Classification Using Combined Machine Learning and Deep Learning Approach.", *Computers, Materials & Continua*, (72) 3, (2022): 5117-5134.

[J5] **Yazan Al-Issa**, Ali Alqudah, Hiam Alquran, Ahmad Al-Issa. "Pulmonary Diseases Decision Support System using Deep Learning Approach.", *Computers, Materials & Continua*, (73) 1, (2022): 311-326.

[J6] Hiam Alquran, **Yazan Al-Issa,** Mohammed Alsalatie, Wan Azani Mustafa, Yasmeen Mohd Yacob, Ala'a Zyout. "Intelligent Diagnosis and Classification of Keratitis.", *Diagnostics*, (12) 6, (2022): 1344.

[J7] Khaled Alawneh, Hiam Alquran, Mohammed Alsalatie, Wan Azani Mustafa, **Yazan Al-Issa**, Amin Alqudah, Alaa Badarneh. "LiverNet: Diagnosis of Liver Tumors in Human CT Images.", *Applied Sciences*, (12) 11, (2022): 5501.

[J8] **Yazan Al-Issa**, Ali Alqudah. "A Lightweight CNN-LSTM Deep Learning Model for Cardiac Valves Disease Classification Using Phonocardiograms.", *Scientific Reports*, (12), (2022).

[J9] Isam Abu-Qasmieh, Hiam Alquran, Ala'a Zyout, **Yazan Al-Issa**, Wan Azani Mustafa, Mohammed Alsalatie. "Automated Detection of Corneal Ulcer Using Combination Image Processing and Deep Learning.", *Diagnostics*, (12) 12, (2022): 3204.

[J10] Hiam Alquran, **Yazan Al-Issa**, Mohammed Alslatie, Isam Abu-Qasmieh, Amin Alqudah, Wan Azani Mustafa, Yasmin Mohd Yacob. "Liver Tumor Decision Support System using Human Magnetic Resonance Images: A Comparative Study.", *Computer Systems Science and Engineering*, (46) 2, (2023): 1653.

[J11] Wan Azani Mustafa, Shahrina Ismail, Fahirah Syaliza Mokhtar, Hiam Alquran, **Yazan Al-Issa**. "Cervical Cancer Detection Techniques: A Chronological Review.", *Diagnostics*, (2023).

[J12] Wan Azani Mustafa, Haniza Yazid, Hiam Alquran, **Yazan Al-Issa,** Syahrul Junaini. "Significant Effect of Image Contrast Enhancement on Weld Defect Detection.", *PLOS ONE*, 2024.

UNDER REVIEW

[U1] **Yazan Al-Issa**, John Njagi, Stephanie Shuckers, Ian Suni. "Application of PCR and PLS in Multi Analyte Concentration Quantification.", *Sensors and Actuators B*, 2023.

[U2] **Yazan Al-Issa**, John Njagi, Stephanie Shuckers, Ian Suni. "A Novel Hybrid ANN-ACO Framework to Compensate For Chemical Interferences in Analyte Concentration Determination.", *Sensors and Actuators B*, 2023.

[U3] **Yazan Al-Issa**, Ali Alqudah. “Automatic Multimodal Detection of COVID19 using Deep Learning Approach.“, *Journal of Healthcare Engineering*, 2023.

[U4] Wan Azani Mustafa, Fahirah Syaliza Mokhtar, Shahrina Ismail, Hiam Alquran, **Yazan Al-Issa**. “The impacts of COVID-19 Pandemic in Malaysia: A systematic review.”, *Biocell*, 2023.

[U5] Hiam Alquran, **Yazan Al-Issa**, Mohammed Alslatie, Shefa Twalbeh. “Deep Learning Models for Segmenting Phonocariogram Signals: A Comparative Study.”, *PLOS ONE*, 2024.

CONFERENCES

[C1] Annual Meeting of Vision Sciences Society, 2007, Sarasota, Florida.

[C2] Al-Khader Al-Qiari, and **Yazan Al-Issa**. “A Fast-Improved Multiple Pattern Matching Algorithm.”, *the 9th International Conference on Information and Communication Systems*, 55-60, 2018.

WORKSHOPS

[W1] CubeSat Design and Training Workshop, 19-25/7/2015, ITU, Istanbul, Turkey.

THESIS SUPERVISED

[T1] Asmaa Al-Damen. “Automatic Diagnosis of Colorectal Cancer Based on Histopathological Images Using Artificial Intelligence Models”, August 2024.

[T2] Amal Yousef. “AI Models to Detect Prostate Cancer Based on MRI Images: A Comparative Study”, August 2024.

COMMITTEE MEMBER

[M1] Mohammed AlKarsanneh. “Detection of Cyberbullying in Social Media in Jordanian Dialects”, August 2022.

[M2] Nisreen Bzoor. "Automating Leukemia Detection and Classification using Hyper Automation", December 2022.

EXTERNAL EXAMINER

[E1] Nusaiba Al-Mnayyis. “Deep Learning Based Disk Herniation Computer Aided Diagnosis System from Axial MRI Scans”, May 2018.

[E2] Maad Ebrahim. "Systematic Exploration of Transfer Learning, Data Augmentation, and Feature Concatenation Techniques for Medical Image Classification", May 2019.

[E3] Ayat Abedallah. “Medical Image Segmentation Using Deep Learning: Case Study on Pneumothorax Segmentation”, June 2020.

GRANTS

[G1] Participant in a HOPES-MADAD funded project

Title: Building Entrepreneurship Capacities for Syrian and Jordanian Higher Education Students in Northern Jordan (ENTREPRENEUR)
Duration: Nov. 2018 to Nov. 2019
Budget: € 53,000

[G2] Participant in an ERASMUS+ funded project

Title: Building Innovation Infrastructure via Technology Transfer Offices COnducted IN JOrdanian Higher Education Institutions (BITTCOIN-JO)
Duration: Nov. 2018 to Nov. 2021
Budget: € 846,000

INDUSTRY EXPERIENCE

Senior Software Architect/Business Analyst, **MIG Solutions,** Amman, Jordan 2009 – 2010

Served in a project management role for X-Stream – banking and trading software. Planned and identified project scope, to reverse engineer and customize X-Stream trading software. X-Stream is a large, complex, high-performance, high-availability, and scalable client/server J2EE application. Gathered business requirements and wrote the Software Requirement Specification (SRS). Served as a mediator between business and technical professionals. Deliverables included:

- Managed 5 vendors and developed Service Level Agreements (SLAs)
- Managed the technical team by creating policies, resolving conflicts, taking corrective actions, mentoring and training junior developers, and facilitating team and client meetings
- Developed Work Breakdown Structure (WBS) that included time, effort, and resource estimates for 12 software engineers

Design Component Engineer**, Intel Corporation,** Austin, TX 2001 – 2004

Assisted in creating and implementing the Quality Management Plan for TEJAS, a large-scale microprocessor project, to succeed the latest Pentium 4 with Prescott core. Managed the preparation of the testing environment which included importing and configuring tools, user management, and all related activities. Accomplishments included:

- Executed a design validation, functional, application, regression, and performance test that certifies the level of quality achieved on the project and built test systems when appropriate
- Led the quality activities and ran different testing types on Pathfinder (microcode coverage tool); the tested database size included 400K paths
- Tracked the project progress to ensure the proper workflow and communicated test plans, test results, and analysis

TECHNICAL SKILLS

- Strong Object-Oriented Analysis (OOA), Design (OOD), and Programming (OOP) skills
- Strong understanding of Design Patterns and SDLC methodologies (XP and SCRUM)
- **Programming Languages**: Python, C, C++, J2SE, J2EE, UML, XML, HTML, Assembly, Basic, Perl, and Verilog Hardware Descriptor Language
- **Microprocessors, Microcontrollers, and FPGAs:** Intel: 8086/88 family, Microchip: dsPIC30F family**,** and Xilinx: Spartan 3E FPGA family.
- **Operating Systems**: Windows XP, 7, and NT; Mac OS, MS-DOS 6.2, UNIX (SunOS/Solaris, Digital OSF1, SGI IRIX), and Red Hat LINUX
- **Development Tools**: MS Outlook, MS Visio, MS Project, MS Access, MS Word, MS Excel, MS PowerPoint, Subversion (SVN), and Concurrent Versions System (CVS)
- Mastering the Internet browsers Netscape, MS Explorer, Mozilla Firefox, and the Internet tools: e-mail, FTP, WWW, HTTP and Telnet
- Working with different specialized packages: Weka, SPSS, MATLAB, LabVIEW, AutoCAD, Wireshark, EasyPC, PSpice, Electronic bench, B^2 Logic, and L-EDIT (VLSI design)

TRAINING

- How to Write a Competitive Project Proposal, National Erasmus+ Office, 2018
- Effective Teaching Conference at Associated Colleges of St. Lawrence Valley, 2014
- Project Management Professional (PMP), Optimiza Academy, 2010
- Foreign Exchange Education & Training, MIG Solutions, 2009
- Effective Meetings, Intel University at Intel Corporation, 2001
- Change-ABLE Organization, Intel University at Intel Corporation, 2001
- Constructive Confrontation, Intel University at Intel Corporation, 2001
- Structured Problem Solving, Intel University at Intel Corporation, 2001
- Information Security Awareness, Intel University at Intel Corporation, 2001

AFFILIATIONS

- JEA
- IEEE Senior Member
- Circle K International
- Intel Involved Steering Committee

AWARDS & ACCOMPLISHMENTS

- Best research paper award, ICICS'2018.
- Full Ph.D. grant, Clarkson University, Potsdam, NY.
- Beta Gamma Sigma (BGS) Business Honor Society.
- Eta Kappa Nu (HKN) Electrical & Computer Engineering Honor Society.

ADVANCED COMPUTER SKILLS & COURSES

Microprocessors	XML and Internet	VLSI Design	Software Engineering
Microprocessor Interfacing	Computer Networks	Image Analysis	Neural Networks
Models in Parallel Computing	Pattern Recognition	Computer Vision	Hardware Synthesis
Data Structures & Algorithms	Computer Architecture	Operating Systems	Parallelizing Compilers
Information Retrieval Systems	Computer Arithmetic	Stochastic Processes	Information Theory
Advanced Computer Architecture	Logic Design FPGAs for DSP	Optimization Techniques	

REFERENCES

1) Stephanie Schuckers, PhD
   Director, Center for Identification Technology Research
   Paynter-Krigman Endowed Professor in Engineering Science
   Professor, Department of Electrical and Computer Engineering
   Clarkson University
   Phone: (315) 268-6536
   E-mail: sschucke@clarkson.edu

2) Charles J. Robinson, PhD
   Founding Director, Center for Rehabilitation Engineering, Science & Technology (CREST) & Herman L. Shulman Chair
   Professor, Department of Electrical and Computer Engineering
   Clarkson University
   Phone: (315) 268-6651
   E-mail: robinson@clarkson.edu

3) Boris Jukic, PhD
   Associate Dean of Graduate Programs Operations & Information Systems
   Professor, School of Business
   Clarkson University
   Phone: (315) 268-3884
   E-mail: bjukic@clarkson.edu

4) Ian Ivar Suni, PhD
   Director, Materials Technology Center
   Professor, Department of Chemistry and Biochemistry
   Professor, Department of Mechanical Engineering and Energy Processes
   Southern Illinois University
   Phone: (618) 453-7822
   E-mail: isuni@siu.edu