Moath H. Alsafasfeh, Ph.D.

Electrical and Computer Engineering

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Personal Information

Born March 20th, 1986 Tafila City, Jordan
Citizenship: Jordanian
Married Status: Married, 3 Children

Education

Ph.D. Electrical and Computer Engineering
Aug 2013 – April 2017

Western Michigan University (WMU)

- **Dissertation Title:** Multiprocessing Real Time Vision Based System for Condition Monitoring in Solar Panels.
- **Evaluation:** Excellent

M.Eng. Communication and Computer Engineering
June 2010 – June 2011

Universiti Kebangsaan Malaysia (UKM)

- **Thesis Title:** Monitoring and Blocking Websites Accessing Using Snort Rules.
- **Evaluation:** Excellent

B.Eng. Computer Engineering
Sep 2004 – Feb 2009

Mutah University

- **Graduation Project:** Estimation of Network Performance based on Active Measurements.
- **Evaluation:** Good

Work History

Oct 2020 – Present

Al-Hussein Bin Talal University, Jordan.
Director of Academic Development and Quality Assurance Center
Job Description: Monitoring of the quality assurance for all the academic programs, program accreditation, and developing the academic skills for the teaching staff.

Sep 2020 – Oct 2020

Al-Hussein Bin Talal University, Jordan.
Chair of Computer Engineering Department

	Al-Hussein Bin Talal University, Jordan. **Computer Engineering Department**
June 2017 – June 2022 **June 2022-Presenet**	**Assistant Professor** **Associate Professor** **Job Description:** Teaching Electrical and Computer Engineering courses for undergrad students; Logic Circuits Design, Computer Architecture, Embedded Systems, Digital Image Processing, Probability and Random Processes, and Engineering Applications. In addition, teaching courses for Master students in Computer and Networking Engineering program; Modeling and Simulation, Advanced Computer Architecture, and Multimedia Communications and Networking.
Sep 2015 – April 2017	**Western Michigan University, USA.** **Math tutor, Department of Mathematics.** **Job Description:** Full time Math Tutor for Finite Mathematics and its Application for undergrad students.
May 2014 – June 2015	**Western Michigan University, USA.** **Research Assistance, Department of Electrical and Computer Engineering.** **Job Description**: Part time Research Assistance for Towards Effective Multicore Processing in Automotive Powertrain Control Systems.
Jan 2014 – May 2014	**Western Michigan University, USA.** **Lab Assistance, Department of Electrical and Computer Engineering.** **Job Description:** Part time Lab Assistance in Digital Image and Signal Processing Laboratory (DISPLAY).
Sep 2011- August 2013	**Al-Balqa Applied University, Jordan.** **Lecturer, Department of Applied Sciences** **Job Description:** Full time lecturer for Logic Design, Microprocessors Design, Computer Architecture, Operating Systems, Computer Networks, and Computer Security.
Sep 2010 – April 2011	**National University of Malaysia, Malaysia.** **Research Assistance, Department of Electrical, Electronics and Systems Engineering.** **Job Description:** Part-time Research Assistance for Exploring and Improving Network Security Systems.
March 2010 – June 2010	**Jordanian Engineers Association, Jordan.** **Administrative Engineer.** **Job Description:** Filed Survey for new Graduate Engineers who worked across all Companies and Factories in Jordan.
June 2008 – Sep 2008	**Tafila Technical University, Jordan.** **Trainer Engineer, Department of Electrical Engineering.** **Job Description:** worked as a supervisor for Microprocessor lab for undergrad students.

Research Interests

- Parallel Processing, Multiprocessor and Multicore systems.

- Computer Vision, Image Processing and Pattern Recognition.
- AI and Machine Learning.
- Non-Destructive Testing and Evaluation.
- Renewable Energy Systems (Solar Panels and Gardens).
- Drones and Quadcopters.

Granted Projects, Awards, Fellowships, and Training Workshops

- Physical Layer Security Schemes for IoT Network (PhySec), Science for Security and Peace Program, NATO, Co-Investigator, Grant Amount $464000, 2021.
- International Credit Mobility at Staffordshire University, Erasmus Plus, 2020.
- Introducing Recent Electrical Engineering Development for Undergraduate Curriculum (IREEDER), Capacity Building for Higher Education, Erasmus Plus, Co-Investigator, Grant Amount $840000, 2019.
- Thermal Inspection Lab for Vehicle Inspection using Images and Computer Vision (TIL), Al-Hussein Bin Talal University, Jordan, Co-Investigator, Grant Amount $60000, 2019.
- International students award from Western Michigan University, USA, Grant Amount $5000, 2016.
- Funded Research project from the College of Engineering at Western Michigan University, USA, Grant Amount $3500, 2016.
- Ph.D. Scholarship from Al-Hussein Bin Talal University, Jordan, 2013.
- Bachelor Scholarship from Ministry of Higher Education, Jordan, 2004.
- Capacity Building: Digital Experiential Teaching and Learning Course, Online Training Program, British Council, from 18 August - 5 September 2021.
- Developing National Capacities to Develop e-Learning Courses in Jordan, Level 1, Ministry of Higher Education, Jordan, from 5 March – 28 April 2021.

Current and Previous Master Students Supervision

Alaa Alshamalat	Thesis Title "Enhancing Energy Efficiency in WSN using Machine Learning"
Toqa Aleoirat	Thesis Title" "Machine Learning Model for Attack Detection in IoT Networks"
Rima Al-Qudah	Thesis Title "Deep Learning Approach for Detecting Distributed Denial of Service".
Raed Al-Tebare	Thesis Title "Developing Image Compression Techniques for Deep Learning Applications". **Graduated Spring 2021.**
Zainab Al-Naimat	Thesis Title "Improving Foggy Road Visibility using Machine Vision", **Graduated Spring 2020.**

Publications

Moath Alsafasfeh, Zaid A Arida, Omar A Saraereh, Machine Learning-based Optimal Framework for Internet of Things Networks, *Computers, Materials & Continua*, Vol 71, No. 3. 2022.

Moath Alsafasfeh, Bradely Bazuin, Ikhlas Abdel-Qader, Super-linear speedup for real-time condition monitoring using image processing and drones, *International Journal of Electrical and Computer Engineering (IJECE)*, 12 (2), 2022.

Mahmoud Alnaanah, **Moath Alsafasfeh**, Ahmad Aljaafreh, Amir Abu-Al-Aish, An Optimized Fragile Image Watermarking Method for Tamper Detection and Recovery Using SPIHT and Reed-Solomon Coding, Jordan Journal of Electrical Engineering, 8 (1), 2022.

Laiali Almazaydeh, **Moath Alsafasfeh**, Reyad Alsalameen, Shoroq Alsharari, Formalization of the prediction and ranking of software development life cycle models, *International Journal of Electrical and Computer Engineering (IJECE)*, 12 (1), 2022.

Marcus de Ree, Georgios Mantas, Jonathan Rodriguez, Saud Althunibat, Marwa K Qaraqe, Abdullah Alhasanat, Saif M Al-Kuwari, **Moath Alsafasfeh**, Gabriele Oligeri, Seda Tusha, Muhammad Usman, Fatima Abu Taha, Samiha Alfalahat, Tasneem Alshamaseen, Malak Qaisi, Data Confidentiality for IoT Networks: Cryptographic Gaps and Physical-Layer Opportunities, *2021 IEEE 26th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, 2021.

Moath Alsafasfeh, Zaid A Arida, Omar A Saraereh, Qais Alsafasfeh, Salem Alemaishat, An Optimized Data Fusion Paradigm for WSN Based on Neural Networks, *Computers, Materials & Continua*, 69 (1), 2021.

Abdullah Alhasanat, Saud Althunibat, Mohanad Alhasanat, **Moath Alsafasfeh**, Index modulation based decision gathering schemes for wireless sensor networks, *Transactions on Emerging Telecommunications Technologies*, 32 (10), 2021.

Mohanad Alhasanat, **Moath Alsafasfeh**, Abdullah Alhasanat, Saud Althunibat, RetinaNet-Based Approach for Object Detection and Distance Estimation in an Image, *International Journal on Communications Antenna and Propagation*, 11 (1), 2021.

Qabalin, Majdi K., Zaid A. Arida, Omar A. Saraereh, Falin Wu, Imran Khan, Peerapong Uthansakul, and **Moath Alsafasfeh**. "An Improved Dictionary Cracking Scheme Based on Multiple GPUs for Wi-Fi Network.", *Computers, Materials & Continua*, 66 (3), 2021.

Alhasanat, S. Althunibat, M. Alhasanat and **Moath Alsafasfeh**, "An Efficient Index-Modulation-Based Data Gathering Scheme for Wireless Sensor Networks," in *IEEE Communications Letters*, vol. 25, no. 4, pp. 1363-1367, April 2021

Qais Alsafasfeh, Omar A. Saraereh, **Moath Alsafasfeh**, Ayman Maqableh, Imran Khan, and Bong Jun Choi. "An Efficient Algorithm for Power Flow Optimization in PV Inverters Systems." *Electric Power Components and Systems* 2020: 1-24.

Alluhaidan Marwan S., **Moath Alsafasfeh**, Ikhlas Abdel-Qader, and Osama Abudayyeh. "Retinex-Based Framework for Visibility Enhancement During Inclement Weather with Tracking and Estimating Distance of Vehicles." In *2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT)*, pp. 250-255. IEEE, 2019.

Haider Mohamed K., Ikhlas Abdel-Qader, and **Moath Alsafasfeh**. "A Robust Sparse System Identification via Integrating an Individualized Time-Varying Stepsize Adjustments." In *2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT)*, pp. 705-710. IEEE, 2019.

Mohanad Alhasanat, Saud Althunibat, Khalid Darabkeh, Abdullah Alhasanat, and **Moath Alsafasfeh.** "A Physical-Layer Key Distribution Mechanism for IoT Networks." *Mobile Networks and Applications* (2019): 1-6.

Moath Alsafasfeh, Ikhlas Abdel-Qader, Bradley Bazuin, Qais Alsafasfeh, and Wencong Su. "Unsupervised Fault Detection and Analysis for Large Photovoltaic Systems Using Drones and Machine Vision." Energies 11, no. 9 (2018): 1-18.

Moath Alsafasfeh, I. Abdel-Qader and B. Bazuin, "Fault Detection in Photovoltaic System Using SLIC and Thermal Images, " *8th International Conference on Information Technology (ICIT),* Amman, Jordan, 2017.

Moath Alsafasfeh. "Multiprocessing Real Time Vision Based System for Condition Monitoring in Solar Panels." Western Michigan University, (2017).

Moath Alsafasfeh, I. Abdel-Qader and B. Bazuin, "Multicore Real Time Feature Detection System Using Thermal Video for Nondestructive Testing ," *2016 International Conference on Computational Science and Computational Intelligence (CSCI)*, Las Vegas, NV, 2016.

Moath Alsafasfeh, A. Alshbatat, Configuring Snort as a Firewall on Windows 7 Environment, Journal of Ubiquitous Systems & Pervasive Networks (JUSPN), Volume 3, No. 2 (2011) pp. 73-77.

Computer Skills

- Proficient in Programming of Python, C, and C++.
- Proficient in Programming of Arduino.
- Proficient in Eclipse Integrated Development Environment (IDE).
- Proficient in Windows and Linux (Ubuntu and Scientific Linux).
- Very good skills in MATLAB and VHDL Programming.
- Very good skills in Programming of Raspberry.
- Very good skills in GNURadio.

Personal Activities

- Al-Hussein Bin Talal University
    - A Representative of the Faculty of Engineering at the University Council.
    - A Representative of the Computer Engineering Department, College of Engineering Council.
    - Member of the Graduate Studies Committee at the Faculty of Engineering.
    - Member of the Development, Information and Planning Committee.
    - Chairman of a technical committee to tender the renovation of the Computer Center.
- Member of IEEE.
- Member of Jordanian Engineering Association.
- Referee member in Hult Prize, Jordan 2017.
- Referee member in Intel International Science and Engineering Fair, Jordan 2018, 2019 and 2020

References

Dr. Atef Alkharabsheh
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