# Mohammad A. Alsmirat

**Department of Computer Science**
**University of Sharjah**

## SUMMARY

I am a green card holder which I acquired through the National Interest Waiver (NIW) program, and I am searching for an academic position in the US. Currently, I am an associate professor of computer science in University of Sharjah (UoS) with more than 16 years of research and development experience, more than 20 years of experience in teaching and training, and have published more than 75 peer reviewed research papers with more than 1100 citations according to Google scholar. Previously, I was an associate professor of computer science in Jordan University of Science and Technology (JUST). During my Work at JUST, I have supervised and co-supervised 12 master students in their thesis research who have all finished their degrees successfully, with at least one journal publication, and many of them are currently pursuing their PhD studies in USA. I have very good programming experience in assembly, Verilog, C, C++, C#, JAVA, PHP, JSP, Python, MPI, MATLAB, Web Programming, and UNIX shell programming. I also have experience in game design and programming. My research concentration is to provide smarter solutions that are based on machine learning in the fields of Video on Demand Systems, Request Scheduling, Video Streaming over Wireless Networks, Automated Video Surveillance Systems, Network Bandwidth Optimization and Allocation, Medical Image Processing and Computer Vision, and Vehicle to Vehicle Networks. I have also conducted research projects in the fields of System Simulation, Distributed Systems, GPU Acceleration, Data Science, and Computer Security.

## EDUCATION

**PhD, Computer Engineering** **January 2007-April 2013**
Wayne State University, Michigan, USA
Thesis - Maximizing resource utilization in video streaming systems
GPA 4.0/4.0

**Master of Science, Computer Science** **September 2002-December 2003**
New York institute of technology, New York, USA
Project - Stenography as a second level of security
GPA 3.8/4.0

**Bachelor of Science, Computer Science** **September 1998-June 2002**
Jordan University of Science and Technology, Irbid, Jordan
GPA 90.4/100

## PROFESSIONAL EXPERIENCE

**Computer Science Program Director** **September 2022 - until now**
**University of Sharjah, Sharjah, UAE**
With 443 students in the program for 2022-2023 and 529 students for 2023-2024, It is crucial to maintain the quality and effectiveness of the Computer Science Program. As a Coordinator, I am responsible for overseeing the program's curriculum, academic planning, and student support, ensuring a seamless and enriching learning experience for our students. My role is instrumental in guiding and shaping the future of

the program.

**Associate Professor of Computer Science** **September 2020 - until now**
**University of Sharjah, Sharjah, UAE**

- Perform research in the field of multimedia systems and networks. Research projects conducted include:
  - Deep Learning based medical computer aided diagnoses systems
  - Supervised Deep learning image retargeting technique identification.
  - Deep learning for person identification from fingerprint digital images.
  - Computerized system for person identification form ethmoid and sphenoid sinuses.
  - Deep learning based distracted driver detection from different camera angles.
- Teach graduate and undergraduate computer science courses.
  I taught the following graduate courses:
  - Computer vision and image processing

  I taught the following undergraduate courses:
  - Introduction to programming
  - Programming lab
  - Programming for engineers
  - Data structures and algorithms
  - Introduction to information technology
  - Multimedia Technologies
  - Web Programming
  - Introduction to computer vision and image processing
  - Object oriented design and implementation
- Supervise Master and senior undergraduate students in their research and graduation projects
- Member in both undergraduate and graduate curriculum committee in the department and the collage
- Member of department quality assurance and ABET committee
- Member of the collage outreach committee
- Department representative in the collage council
- Participated in the creation and the accreditation of the new programs in the department. During my stay, the department opened 4 new programs including PhD in Computer Science, Master of Science in Data Science, Master of Science in AI, and Bachelor degree in Biomedical Informatics.

**Associate Professor of Computer Science** **September 2018 - August 2020**
**Jordan University of Science and Technology , Irbid, Jordan**

- Perform research in the field of multimedia systems and networks. Research projects conducted include:
  - Deep Learning based medical computer aided diagnoses systems
  - Machine learning for congestion control in V2V networks
  - Vehicle GPS Location prediction
  - Face recognition in resource limited systems
  - Bio-threat detection
  - Dynamic bandwidth adaptation in automated video surveillance system
  - Security in automated video surveillance system
- Teach graduate and undergraduate computer science courses.
  I taught the following graduate courses:

- Advanced operating systems
- Selected topics in computer science
- Seminar in advanced computer science
- Comprehensive exam

I taught the following undergraduate courses:

- Introduction to programming
- C++ programming language
- Computer architecture
- Data structures and algorithms
- Emerging computer systems
- Fundamentals of programming languages
- Introduction to information technology
- Image processing
- Fundamentals of multimedia
- Operating systems
- Programming lab
- special topics in computer science (3)
- Unix programming

- Supervise Master and senior undergraduate students in their thesis and graduation projects
- Review internal and external grant proposals
- Serve on hiring graduate admissions committees
- Participate in both undergraduate and graduate curriculum design
- Member of department quality assurance and ABET committee
- Member of the department graduate program committee
- Head of faculty student affairs committee

**Chairman of the department of Computer Science September 2017 - September 2019**
**Jordan University of Science and Technology , Irbid, Jordan**
Beside the teaching and the research activities, the chairman is responsible for the following:

- Consolidate strategic objectives and policies related to the educational process and research activities in the Department and oversee their application as well as assist faculty members in this regard.
- Propose and develop academic and research plans for the Department and oversee their implementation.
- Actively contribute to the College Council as one of its members.
- Prepare a statement on the department needs and submit it to the Dean, at the appropriate time after first presenting it to the Department Council, for his/her consideration when preparing the annual budget.
- Construct different department committees and oversea their performance.
- Oversee the selection of textbooks and references for the courses offered by the Department.
- Construct the department course schedule and Manage the distribution of the faculty teaching load and present it to the Department Council.
- Monitor and maintain the student courses registration process at the beginning of each semester.
- Monitor and maintain the quality of the teaching process during the semester.
- Hire part time lecturers for courses without teachers in the department at the beginning of each semester and monitor their performance during the semester.
- Assign students to academic advisors and follow up on the progress of students, according to their study plans. Prepare all reports as requested by the Deanship and University Administration.

- Prepare documents on the quality of the educational process for academic accreditation.
- Oversee the preparation of a department plan for the assessment and evaluation of courses offered by the Department, consistent with the program study plans in terms of objectives, outcomes and means of implementation.
- Perform continuous curriculum improvements.

**Assistant Professor of Computer Science** **September 2013 - September 2018**
**Jordan University of Science and Technology , Irbid, Jordan**

- Perform research in the field of multimedia systems and networks. Research projects include:
  - Security of video streaming system
  - Impact of image quality on fingerprint recognition system
  - CAD for disk herniation diagnosis
  - Bandwidth management in automated video surveillance system
  - Mobile edge computing support for automated video surveillance system
  - Server design for video on demand
  - A Realistic NS3-based Automated Wireless Video Surveillance Simulation Framework
  - Visualization over Cognitive Radio Networks
  - Computation acceleration using GPU
  - Video streaming in a cloud supported environment
- Teach graduate and undergraduate computer science courses. I have taught the following undergraduate courses:
  - C++ Programming
  - Data Structures
  - Fundamentals of Programming Languages
  - Operating Systems
  - Computer Architecture
  - Image Processing using Matlab
  - Fundamentals of Multimedia
  - Emerging Computing Systems

  I have taught the following graduate courses:
  - Operating Systems
  - Multimedia Systems and Networking

**Research and Development Engineer** **January 2013 - September 2013**
**General Motors, Warren, USA**
I conducted research on how to utilize V2V communication for car crash avoidance applications. In particular, I conducted research on the scalability and the security of DSRC-based V2V networks. I analyzed current congestion control algorithms and proposed new algorithms to solve the congestion problem in such networks. I also participated in the design of the security system in such networks.

**Graduate Teaching Assistant** **August 2007-January 2013**
**Electrical and Computer Engineering Department**
**Wayne State University, Detroit, USA**

- Taught three laboratory courses, namely: Digital Circuit Laboratory (Undergraduate Sophomore level), Computer Organization Laboratory (Undergraduate Senior level), and Introduction to micro-controller laboratory according to a systematic plan of lectures, demonstrations, and small applied projects.
- Prepared and administered all lab course related exams and projects and marked them according to a plan to assess the student outcomes in compliance with the Accredited Board for Engineering and Technology (ABET) standards.
- Developed the lab course syllabus and I prepared class notes and courses outlines.

**Research Assistant** **January 2007-January 2013**
**Multimedia Computing and Networking Research Lab**
**Wayne State University, Detroit, USA**

- Developed an automated video surveillance system simulator that was based on OPNET.
- Developed a Video-on-Demand server simulator using C.
- Developed a JPEG image decoder using C.
- Developed a Motion JPEG video streamer using C.
- Developed a MIPS processor simulator using Verilog.
- Developed some simple applications using the Motorola 6800 microcontroller.
- Developed an image classification system using MATLAB.
- Designed and developed a 2D game using Microsoft XNA and C# for Windows platform.

**Full time Lecturer of Computer Science** **September 2003 - December 2006**
**Jordan University of Science and Technology , Irbid, Jordan**

- Teach undergraduate computer science courses.
- Prepare the courses entirely.
- I taught the following undergraduate courses:
  - C++ Programming
  - Data Structures
  - Introduction to Computer Science
  - UNIX programming

# FUNDED RESEARCH PROJECTS

- Forensics Human Identification Using Ethmoid Bone CT Scans and Machine Learning (Principle Investigator, University of Sharjah)
- Building a Deep Learning Compatible Image Re-targeted Set (Principle Investigator, University of Sharjah).
- Advancing Precision Agriculture in Jordan: Using Computer Vision to Support the Sustainability and Quality of Olive Farming (Co-PI, The Royal Academy of Engineering, UK).
- Impact of Image Compression on Fingerprint Recognition (Principle Investigator, Jordan University of Science and Technology).
- A CAD System for Diagnosing and Classifying Disk Herniation Types from MRI Images (Principle Investigator, Jordan University of Science and Technology).
- A Realistic NS3-based Automated Wireless Video Surveillance Simulation Framework (Principle Investigator, Jordan University of Science and Technology).

## List of Master Students' Thesis Titles

- Computer-Aided Diagnosis of Lumbar Disk Herniation
- DSRC Network Congestion Control using Dynamic Distribution of Safety Messages over EDCA Access Categories
- Agent Based Validation Based on Histological Images in Ductal Carcinoma in situ
- Geometric sequence based multipath load balancing approach for mobile ad hoc networks
- A Realistic NS3-based Automated Wireless Video Surveillance Simulation Framework
- The impact of image compression on fingerprint identification algorithms
- Accelerating White Blood Cells Image Segmentation Using GPU
- Deep Learning based Disk Herniation Computer Aided Diagnosis System from Axial MRI Scans
- Inter-Vertebral Disc Herniation Diagnosis from Three-Dimensional Model's Geometrical Features
- ARIMA based Dynamic Vehicle Location Prediction for DSRC based V2V Communication Systems
- An Agent-Based Model for Multiple Biological Threats Detection
- Systematic Exploration of Transfer Learning, Data Augmentation, and Feature Concatenation Techniques for Medical Image Classification

# HONORS

- Senior IEEE member, June 2023
- Member of Tau Beta Pi engineering honor society. Wayne State University, Detroit, MI, November 2011.
- Outstanding Teaching Assistant Service Award, Wayne State University, Detroit, MI, April 2011.
- Full PhD Scholarship, Wayne State University, Detroit, MI, January 2007 - December 2012.
- Full Master degree sponsorship, Jordan University of Science and Technology, Irbid, Jordan, 2002-2003.
- Listed on Dean's Honor List, Jordan University of Science and Technology, Irbid, Jordan, 1998-2002.
- Listed on the President's Honor List, Jordan University of Science and Technology, Irbid, Jordan, 2000-2002.
- Ministry of High Education Sponsorship during my Bachelor study, Jordan University of Science and Technology, Irbid, Jordan, 1999-2002.
- Ranked first in my High school, Ramtha Secondary School, Ramtha, Jordan, 1998.

# PUBLICATIONS

## Refereed Journal Articles

[1] Mohammad Alsmirat, Yousef Sharrab, Monther Tarawneh, Sana'a Al-shboul, and Nabil Sarhan. Video coding deep learning-based modeling for long life video streaming over next network generation. *Cluster Computing*, 26(2):1159–1167, jan 2023.

[2] Mohammad A. Alsmirat, Ethar Qawasmeh, Mahmoud Al-Ayyoub, and Yaser Jararweh. Building an image set for modeling image re-targeting using deep learning. *Simulation Modelling Practice and Theory*, 126, 2023. Cited by: 0.

[3] Mohammad Alsmirat, Nusaiba Al-Mnayyis, Mahmoud Al-Ayyoub, and Asma'A Al-Mnayyis. Deep learning-based disk herniation computer aided diagnosis system from mri axial scans. *IEEE Access*, 10:32315 – 32323, 2022.

[4] Mohammad A. Alsmirat, Khaled Alawneh, Mahmoud Al-Ayyoub, and Mays Al-Dwiekat. Building a simulated educational environment for the diagnosis of lumbar disk herniation using axial view mri scans. *International Journal of Advanced Intelligence Paradigms*, 22(3-4):295 – 317, 2022.

[5] Otmane Azeroual, Meena Jha, Anastasija Nikiforova, Kewei Sha, Mohammad Alsmirat, and Sanjay Jha. A record linkage based data deduplication framework with datacleaner extension. *Multimodal Technologies and Interaction*, 6(4), 2022. Cited by: 1; All Open Access, Gold Open Access.

[6] Sanaa Abu Alasal, Mohammad Alsmirat, Asma'A Al-Mnayyis, Qanita Bani Baker, and Mahmoud Al-Ayyoub. Improving radiologists' and orthopedists' qoe in diagnosing lumbar disk herniation using 3d modeling. *International Journal of Electrical and Computer Engineering*, 11(5):4336 – 4344, 2021. Cited by: 3; All Open Access, Gold Open Access, Green Open Access.

[7] Qanita Bani Baker, Mohammad A. Alsmirat, Khaled Balhaf, and Mohammed A. Shehab. Accelerat- ing white blood cells image segmentation using gpus. *Concurrency and Computation: Practice and Experience*, 33(2), 2021. Cited by: 4.

[8] Hassan Najadat, Maad Ebrahim, Mohammad Alsmirat, Obadah Shatnawi, Mohammed Nour Al-Rashdan, and Ahmad Al-Aiad. *Investigating the Classification of Human Recognition on Heterogeneous Devices Using Recurrent Neural Networks*, pages 67–80. Springer International Publishing, Cham, 2021.

[9] Yousef O. Sharrab, Mohammad Alsmirat, Bilal Hawashin, and Nabil Sarhan. Machine learning-based energy consumption modeling and comparing of h.264 and google vp8 encoders. *International Journal of Electrical and Computer Engineering*, 11(2):1303 – 1310, 2021. Cited by: 2; All Open Access, Gold Open Access, Green Open Access.

[10] Shadi AlZu'bi, Sokyna AlQatawneh, Mohammad ElBes, and Mohammad Alsmirat. Transferable hmm probability matrices in multi-orientation geometric medical volumes segmentation. *Concurrency and Computation: Practice and Experience*, 32(21), 2020. Cited by: 6.

[11] Mohammad S. Alzyout and Mohammad A. Alsmirat. Performance of design options of automated arima model construction for dynamic vehicle gps location prediction. *Simulation Modelling Practice and Theory*, page 102148, 2020.

[12] Mohammad Alsmirat Qanita Bani Baker Shadi AlZu'bi Asma'a Al-Mnayyis, Sanaa Abu Alasal. Lumbar disk 3d modeling from limited number of mri axial slices. *International Journal of Electrical and Computer Engineering (IJECE)*, pages 4101–4108, 2020.

[13] Mohammad Al-Zinati, Taha Almasri, Mohammad Alsmirat, and Yaser Jararweh. Enabling multiple health security threats detection using mobile edge computing. *Simulation Modelling Practice and Theory*, page 101957, 2019.

[14] M Alsmirat, Y Jararweh, and M Al-Ayyoub. Speeding DBLP querying using hadoop and spark. *IOP Conference Series: Materials Science and Engineering*, 459:012003, dec 2018.

[15] Mahmoud Al-Ayyoub, Nusaiba Al-Mnayyis, Mohammad A Alsmirat, Khaled Alawneh, Yaser Jararweh, and Brij B Gupta. Sift based roi extraction for lumbar disk herniation cad system from mri axial scans. *Journal of Ambient Intelligence and Humanized Computing*, pages 1–9, 2018.

[16] Mohammad A Alsmirat, Fatimah Al-Alem, Mahmoud Al-Ayyoub, Yaser Jararweh, and Brij Gupta. Impact of digital fingerprint image quality on the fingerprint recognition accuracy. *Multimedia Tools and Applications*, pages 1–40, 2018.

[17] Mohammad A Alsmirat and Nabil J Sarhan. Cross-layer optimization for many-to-one wireless video streaming systems. *Multimedia Tools and Applications*, pages 1–23, 2018.

[18] Yaser Jararweh, Manar Bani Issa, Mustafa Daraghmeh, Mahmoud Al-Ayyoub, and Mohammad A Alsmirat. Energy efficient dynamic resource management in cloud computing based on logistic regression model and median absolute deviation. *Sustainable Computing: Informatics and Systems*, 19:262–274, 2018.

[19] Mohammad A Alsmirat, Yaser Jararweh, Mahmoud Al-Ayyoub, Mohammed A Shehab, and Brij B Gupta. Accelerating compute intensive medical imaging segmentation algorithms using hybrid cpu-gpu implementations. *Multimedia Tools and Applications*, 76(3):3537–3555, 2017.

[20] Yaser Jararweh, Manar Bani Issa, Mustafa Daraghmeh, Mahmoud Al-Ayyoub, and Mohammad A Alsmirat. Energy efficient dynamic resource management in cloud computing based on logistic regression model and median absolute deviation. *Sustainable Computing: Informatics and Systems*, 19:262–274, 2018.

[21] Mohammad A Alsmirat, Yaser Jararweh, Mahmoud Al-Ayyoub, Mohammed A Shehab, and Brij B Gupta. Accelerating compute intensive medical imaging segmentation algorithms using hybrid cpu-gpu implementations. *Multimedia Tools and Applications*, 76(3):3537–3555, 2017.

[22] Mohammad A Alsmirat, Yaser Jararweh, Islam Obaidat, and Brij B Gupta. Automated wireless video surveillance: an evaluation framework. *Journal of Real-Time Image Processing*, 13(3):527–546, 2017.

[23] Mohammad A Alsmirat, Yaser Jararweh, Islam Obaidat, and Brij B Gupta. Internet of surveillance: a cloud supported large-scale wireless surveillance system. *The Journal of Supercomputing*, 73(3):973–992, 2017.

[24] Mohammad A Alsmirat, Islam Obaidat, Yaser Jararweh, and Mohammed Al-Saleh. A security framework for cloud-based video surveillance system. *Multimedia Tools and Applications*, 76(21):22787–22802, 2017.

[25] Yaser Jararweh, Mohammad Alsmirat, Mahmoud Al-Ayyoub, Elhadj Benkhelifa, Ala' Darabseh, Brij Gupta, and Ahmad Doulat. Software-defined system support for enabling ubiquitous mobile edge computing, 2017.

[26] Yaser Jararweh, Mohammad A Alsmirat, Muneer Al-Zaboon, HAYTHEM A SALAMEH, and Osamah S Badarneh. A multi-hop multicasting routing protocol for cognitive radio networks. *Adhoc & Sensor Wireless Networks*, 39, 2017.

[27] Mahmoud Al-Ayyoub, Yaser Jararweh, Ahmad Doulat, Haythem A Bany Salameh, Ahmad Al Abed Al Aziz, Mohammad Alsmirat, and Abdallah A Khreishah. Virtualization-based cognitive radio networks. *Journal of Systems and Software*, 117:15–29, 2016.

[28] Yahya M Tashtoush, Mohammad A Alsmirat, and Tasneem Alghadi. Geometric sequence based multipath routing protocol for multi-hop ad hoc networks. *International Journal of Pervasive Computing and Communications*, 12(4):394–407, 2016.

[29] Mohammad A Alsmirat and Nabil J Sarhan. Detailed performance and waiting-time predictability analysis of scheduling options in on-demand video streaming. *Journal on Image and Video Processing*, 2010:1, 2010.

[30] Nabil J Sarhan, Mohammad A Alsmirat, and Musab Al-Hadrusi. Waiting-time prediction in scalable on-demand video streaming. *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)*, 6(2):11, 2010.

## Refereed Conference Publications

[1] M Moneb Khaled, Aghyad AL Sayadi, Mohammad Alsmirat, and Mahmoud A. Al-Ayyoub. Fingerprint identification from digital images using deep learning. In *2023 Third Intelligent Cybersecurity Conference (ICSC)*, 2023.

[2] Ruba Kharsa, Rouaa Alzoubi, Mohammad A. Alsmirat, and Mahmoud Al-Ayyoub. Image retargeting techniques identification using supervised deep learning. In *2023 The International Conference on Intelligent Data Science Technologies and Applications (IDSTA)*, 2023.

[3] Mohamad Tarabin, Mariam Mohamed Alketbi, Hamad Rashed, Mohammad A. Alsmirat, and Yousef Sharrab. Detecting distracted drivers using convolutional neural networks. In *2023 The International Conference on Intelligent Data Science Technologies and Applications (IDSTA)*, 2023.

[4] Hafed Zarzour, Mohammad Alsmirat, and Yaser Jararweh. Using deep learning for positive reviews prediction in explainable recommendation systems. page 358 – 362, 2022. Cited by: 0.

[5] Mahmoud Ghandour, Raffi Al-Qurran, Mahmoud Al-Ayyoub, Ali Shatnawi, Mohammad Alsmirat, and Fumie Costen. Classifying olive fruits based on produced oil quality: A benchmark dataset and strong baselines. In *2021 12th International Conference on Information and Communication Systems (ICICS)*, pages 495–501, 2021.

[6] Mahmoud Ghandour, Raffi Al-Qurran, Mahmoud Al-Ayyoub, Ali Shatnawi, Mohammad Alsmirat, and Fumie Costen. Classifying olive fruits based on produced oil quality: A benchmark dataset and strong baselines. page 495 – 501, 2021. Cited by: 0.

[7] Aya Nuseir, Mohammad Alsmirat, Amjad Nuseir, Mahmoud Al-Ayyoub, Mohammed Mahdi, Ahmad Alomari, and Hasan AL-Balas. Building a large comprehensive medical image set of sinus diseases. In *2021 12th International Conference on Information and Communication Systems (ICICS)*, pages 83–89, 2021.

[8] Aya Nuseir, Mohammad Alsmirat, Amjad Nuseir, Mahmoud Al-Ayyoub, Mohammed Mahdi, Ahmad Alomari, and Hasan Al-Balas. Building a large comprehensive medical image set of sinus diseases. page 83 – 89, 2021. Cited by: 0.

[9] Aya Nuseir, Amjad Nuseir, Mohammad Alsmirat, Mahmoud Al-Ayyoub, Mohammed Mahdi, and Hasan AL-Balas. Performance of different machine learning methods for sinus diseases classification. In *2021 12th International Conference on Information and Communication Systems (ICICS)*, pages 77–82, 2021.

[10] Aya Nuseir, Amjad Nuseir, Mohammad Alsmirat, Mahmoud Al-Ayyoub, Mohammed Mahdi, and Hasan Al-Balas. Performance of different machine learning methods for sinus diseases classification. page 77 – 82, 2021. Cited by: 1.

[11] Mohammad Alsmirat Yaser Jararweh Izzat Alsmadi, Mahmoud Al-Ayyoub. Using popular search terms in stock price prediction. In *2019 The Sixth International Conference on Social Networks Analysis, Management, and Security (SNAMS)*, pages 279–285, October 2019.

[12] Mohammad Alsmirat Yaser Jararweh Mohammad Al-Zinati, Taha Almasri. A mobile-edge computing bio-surveillance framework for multiple biological threat detection. In *2019 The Sixth International Conference on Internet of Things: Systems, Management and Security (IOTSMS)*, pages 104–109, October 2019.

[13] Mohammad Al-Saleh Mohammad Alzyout, Mohammad Alsmirat. Automated arima model construction for dynamic vehicle gps location prediction. In *2019 The Sixth International Conference on Internet of Things: Systems, Management and Security (IOTSMS)*, pages 308–386, October 2019.

[14] Mahmoud Al-Ayyoub Yousef Shatnawi, Mohammad Alsmirat. Face recognition using eigen-faces and extensionneural network. In *16th ACS/IEEE International Conference on Computer Systems and Applications*, October 2019.

[15] M. Ebrahim, M. Al-Ayyoub, and M. A. Alsmirat. Will transfer learning enhance imagenet classification accuracy using imagenet-pretrained models? In *2019 10th International Conference on Information and Communication Systems (ICICS)*, pages 211–216, June 2019.

[16] D. R. Mohammad, S. Al-Momani, Y. M. Tashtoush, and M. Alsmirat. A comparative analysis of quality assurance automated testing tools for windows mobile applications. In *2019 IEEE 9th Annual Computing and Communication Workshop and Conference (CCWC)*, pages 0414–0419, Jan 2019.

[17] Y. Tashtoush, M. N. AlRashdan, O. Salameh, and M. Alsmirat. Swagger-based jquery ajax validation. In *2019 IEEE 9th Annual Computing and Communication Workshop and Conference (CCWC)*, pages 0069–0072, Jan 2019.

[18] H. Al-Theiabat, M. Al-Ayyoub, M. Alsmirat, and M. Aldwair. A deep learning approach for amazon ec2 spot price prediction. In *2018 IEEE/ACS 15th International Conference on Computer Systems and Applications (AICCSA)*, pages 1–5, Oct 2018.

[19] Q. B. Baker, T. A. Zaitoun, S. Banat, E. Eaydat, and M. Alsmirat. Automated detection of benign and malignant in breast histopathology images. In *2018 IEEE/ACS 15th International Conference on Computer Systems and Applications (AICCSA)*, pages 1–5, Oct 2018.

[20] M. Ebrahim, M. Al-Ayyoub, and M. Alsmirat. Determine bipolar disorder level from patient interviews using bi-lstm and feature fusion. In *2018 Fifth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, pages 182–189, Oct 2018.

[21] Y. Shatnawi, M. Alsmirat, M. Al-Ayyoub, and M. Aldwairi. The impact of the number of eigen-faces on the face recognition accuracy using different distance measures. In *2018 IEEE/ACS 15th International Conference on Computer Systems and Applications (AICCSA)*, pages 1–5, Oct 2018.

[22] Mohammed I Al-Saleh, Mohammad A Alsmirat, Yaser Jararweh, and Islam Obaidat. A unified key distribution and session management protocol for mobile video surveillance systems. In *2018 Fifth International Conference on Internet of Things: Systems, Management and Security*, pages 234–238. IEEE, 2018.

[23] Sanaa Abu Alasal, Mohammad Alsmirat, Qanita Bani Baker, and Yaser Jararweh. Improving passive 3d model reconstruction using image enhancement. In *2018 6th International Conference on Multimedia Computing and Systems (ICMCS)*, pages 1–7. IEEE, 2018.

[24] M Alsmirat, Y Jararweh, and M Al-Ayyoub. Speeding dblp querying using hadoop and spark. In *IOP Conference Series: Materials Science and Engineering*, volume 459, page 012003. IOP Publishing, 2018.

[25] Shadi AlZu'bi, Sokyna Al-Qatawneh, and Mohammad Alsmirat. Transferable hmm trained matrices for accelerating statistical segmentation time. In *2018 Fifth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, pages 172–176. IEEE, 2018.

[26] Maad Ebrahim, Mahmoud Al-Ayyoub, and Mohammad Alsmirat. Determine bipolar disorder level from patient interviews using bi-lstm and feature fusion. In *2018 Fifth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, pages 182–189. IEEE, 2018.

[27] Maad Ebrahim, Mohammad Alsmirat, and Mahmoud Al-Ayyoub. Performance study of augmentation techniques for hep2 cnn classification. In *Information and Communication Systems (ICICS), 2018 9th International Conference on*, pages 163–168. IEEE, 2018.

[28] Siyakha N Mthunzi, Elhadj Benkhelifa, Mohammad A Alsmirat, and Yaser Jararweh. Analysis of vm communication for vm-based cloud security systems. In *Software Defined Systems (SDS), 2018 Fifth International Conference on*, pages 182–188. IEEE, 2018.

[29] Ahmad Ababneh, Mahmoud Al-Ayyoub, Yaser Jararweh, and Mohammad Alsmirat. Collision-free anycast transmission scheduling in uwsns. In *Fog and Mobile Edge Computing (FMEC), 2017 Second International Conference on*, pages 207–212. IEEE, 2017.

[30] Mohammad A Alsmirat, Musab Al-Hadrusi, and Yaser Jararweh. Multimedia systems power/energy reduction architectural techniques: a survey. In *2017 International Renewable and Sustainable Energy Conference (IRSEC)*, pages 1–6. IEEE, 2017.

[31] Mohammad A Alsmirat, Ethar Qawasmeh, Mahmoud Al-Ayyoub, Nour Alhuda Damer, and Yaser Jararweh. Building an image database for studying image retargeting. In *Computer Systems and Applications (AICCSA), 2017 IEEE/ACS 14th International Conference on*, pages 457–462. IEEE, 2017.

[32] Khaled Balhaf, Mohammad A Alsmirat, Mahmoud Al-Ayyoub, Yaser Jararweh, and Mohammed A Shehab. Accelerating levenshtein and damerau edit distance algorithms using gpu with unified memory. In *Information and Communication Systems (ICICS), 2017 8th International Conference on*, pages 7–11. IEEE, 2017.

[33] Manar Bani Issa, Mustafa Daraghmeh, Yaser Jararweh, Mahmoud Al-Ayyoub, Mohammad Alsmirat, and Elhadj Benkhelifa. Using logistic regression to improve virtual machines management in cloud computing systems. In *Mobile Ad Hoc and Sensor Systems (MASS), 2017 IEEE 14th International Conference on*, pages 628–635. IEEE, 2017.

[34] Yahya M Tashtoush, Majd Al-Soud, Manar Fraihat, Walaa Al-Sarayrah, and Mohammad A Alsmirat. Adaptive e-learning web-based english tutor using data mining techniques and jackson's learning styles. In *Information and Communication Systems (ICICS), 2017 8th International Conference on*, pages 86–91. IEEE, 2017.

[35] Fatimah Al-alem, Mohammad A Alsmirat, and Mahmoud Al-Ayyoub. On the road to the internet of biometric things: a survey of fingerprint acquisition technologies and fingerprint databases. In *Computer Systems and Applications (AICCSA), 2016 IEEE/ACS 13th International Conference of*, pages 1–6. IEEE, 2016.

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