Amjed A Al-Mousa, Ph.D.

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Phone:
Nationality: Jordan, USA

*A Computer Engineering Professor who combines 12 years of **Silicon Valley** industry experience with more than 13 years of academic experience @ **PSUT**. While I have a solid track record of management experience in industry and academia, I am proud to be a hands-on engineer with extensive expertise in Artificial Intelligence, Machine Learning, and Data Analytics. Always eager to work in state-of-the-art technologies across multiple industries ranging from semiconductor manufacturing to health informatics.*

Education

Ph.D. in Electrical Engineering, **Santa Clara University**, 2010.
Concentrations: Fuzzy Logic, Image Processing on AFM images from NASA Ames Lab, DFT of Asynchronous VLSI circuits.
Dissertation: A New Systematic and Quantitative Approach to Characterization of Surface Nanostructures using Fuzzy Logic.

M.Sc. in Electrical Engineering, **Virginia Tech,** 2000
Concentration: Fuzzy Logic.
Thesis: *Control of Rotary Cranes Using Fuzzy Logic and Time-Delayed Position Feedback Control.*

B.Sc. in Electrical Engineering, **University of Jordan,** 1999.
Ranked **2nd** amongst Spring 1999 class.

Research Interests

Intelligent Systems, Machine learning, UAV optimization algorithms, Fuzzy logic applications, Smart grids, and Cloud Computing.

Academic & Industrial Experience

Princess Sumaya University for Technology, (1/2012- Present) Amman, Jordan
Computer Engineering Department
Dean of Graduate Studies & Scientific Research *(9/2025 – Present)*
Vice Dean of Engineering *(9/2023 – 9/2025)*
Professor *(5/2025 – Present)*
Associate Professor *(1/2020 – 5/2025)*
Assistant Professor *(1/2012 – 1/2020)*
Head of Computer Engineering Dept *(2015/2016, 2017/2018)*

Teaching

- Developing new courses in AI, Machine Learning, Big Data & Cloud Computing.
- Teaching the classes like Logic Design, Computer Arch I & II, Computer Arch for IT, and Electrical Circuits.
- Modernizing the Computer Arch curriculum from MIPS to RISC-V.
- Revamping the Logic Design Lab. to include Verilog as a major lab component.
- Founding committee of the Data Science M.Sc. program
- Leading the effort to establish an Intelligent Systems M.Sc. Program.
- Supervision of M.Sc. thesis of Aya Aljafari "*Speaker Anonymization Using Generative Adversarial Networks*".
- Supervision of 14 Senior Design Projects.
- Serve on multiple Masters Defense Committees.

Service & Industry Collaboration:

- Lead the ABET Reaccreditation cycle of 2024 for five engineering programs.
- Head and serve on many committees at the department, college, and university levels. For example:
    - Head the Scientific Research Committee for College of Engineering.
    - Head the hiring committee at the CE department for several years.
    - Head the curriculum committee for the computer engineering program.
    - Serve on the university research council.
    - Serve on the University Council.
    - Member of the Intelligent Systems Engineering graduate committee.
    - Member of the Electrical Engineering graduate committee.
- Lead the ABET accreditation for the computer Eng. 2018/2019 cycle.
- Establish collaboration with the industry by organizing an MoU with SEDCO and starting the first technical project with them.
- Work with EMC academy to launch Cloud Computing Classes @ PSUT.
- Secure multiple grants from Amazon for the cloud computing class.

Research

- Establish the "Intelligent and Embedded Systems Group"; the first research group at the Engineering College.
- Encourage students, especially undergraduates, to participate in research. Published 10 Journals & 17 conferences with my students.
- Collaborate with many faculty members on research project with applications in:
    - Semiconductor Manufacturing.
    - Power Systems Modeling & Pricing.
    - Traffic and Toll Modeling.

University of Tampere, Visiting Professor (8/2016 – 9/2016) — Tampere, Finland

Worked on the detection of defective stem cells using fuzzy logic

Queen Rania Foundation - Edraak.org (3/2014 – 8/2014) — Amman, Jordan

Collaborate with MIT on delivering one of the first MooC classes in Edraak to more than 30,000 students, *"Intro to Computer Science & Programming"*.

SEVEN Networks, (10/2009- 6/2015, 3/2016-8/2016) — Redwood City, CA

Consultant - Analytics Engineering
Senior Manager - Analytics Engineering
Manager - Analytics Engineering

- Lead a cross-functional, geographically dispersed team.
- Build the data analysis & KPI metrics infrastructure from scratch.
- Experience in moving company systems to cloud-based systems.
- Conducting statistical Big Data analysis & modeling user behavior.
- Analyzing company-wide metrics to detect problems, enhance user retention, and provide proper reporting to executive staff.

PDF Solutions, (3/2005 – 10/2009) — San Jose, CA

Software Engineering Manager
Senior Software Engineer

- Manage two remote teams (Development & QA) consisting of 9 engineers.
- Define product architecture and develop HPC algorithms.

- Hands-on development & architecture of statistical analysis software tools & algorithms (including multivariate analysis, correlation… etc).
- Manage DevOps: source control, release & build mechanism of the product.

Intel Corporation, ***Software Engineer*** (1/2001 – 3/2005) Santa Clara, CA

- Test development & automation for Intel's Graphics drivers (Miniport, Power Management & OpenGL).
- Build a complete automated system to submit Gfx driver for nightly testing and send results to stockholders overnight.
- Web-based applications development, as well as database management and programming.

Virginia Tech, ***Research Assistant-Prof. Ali Nayfeh*** (Aug 1999 – Dec 2000) Blacksburg, VA

- Developed a fuzzy logic-based algorithm to stabilize rotary crane movement. A project funded by the Office of Naval Research (MURI) aimed at stabilizing cargo transfer on high seas**.**

Cyprus Telecommunications Authority, ***Intern*** (Jun 1998 – Aug 1998) Cyprus

- Performing tests on the equipment in the satellite earth station and on the communication links.
- Monitoring earth station equipment.

Funding & Grants

- 2016: Erasmus Phoenix grant for exchange with the University of Tampere, Finland.
- 2014: 10 Galileo Boards from Intel Corp.
- 2014-2016: Funding from EMC Academy for Cloud certification for my Cloud Computing Class.
- 2015: 1600 USD from Amazon.com.
- 2014: 3500 USD from Amazon.com.
- 2013: 2000 USD from Amazon.com.

Awards & Honors

- PSUT Teaching Award 2023/2024.
- PSUT Academic Advising Award 2023/2024.
- PSUT Service Award 2022/2023.
- PSUT Academic Award 2021/2022.
- PSUT Academic Award 2019/2020.
- Best Instructor Award for the year 2015 at PSUT.
- Six recognition awards from Intel Corporation.
- Patent submission award at Intel Corp. for discovering a way to automate miniport testing via System BIOS.
- United Nations undergraduate Scholarship for 5 consecutive years. 1994-1999.
- Dean's List at the University of Jordan 1997.

Publications

Journals

1. *Amjed Al-Mousa, Ahmad Arrabi, Hamza Daoud "A Reinforcement Learning-Based Reverse-Parking System for Autonomous Vehicles", IET Intelligent Transport Systems, Vol 19-1, 2025. [With my Students]*
2. *Amjed Al-Mousa, Hamza Al-Zubaidi, Mohammad Al-Dweik"A Machine Learning-based Approach for Wait-time Estimation in Healthcare Facilities with Multi-stage Queues", IET Smart Cities, 1–18 (2024). [Undergrad Student Project in Collaboration with the Industry]*
3. *Ayman Faza, **Amjed Al-Mousa**, Rajaa Alqudah"Optimal PMU Placement for Fault Classification and Localization Using Enhanced Feature Selection in Machine Learning Algorithms", International Journal of Energy Research, vol. 2024, no. 1, pp.5543160.*
4. ***Amjed Al-Mousa**, Hamza Al-Zubaidi, Mohammad Al-Dweik"A Machine Learning-based Approach for Wait-time Estimation in Healthcare Facilities with Multi-stage Queues", IET Smart Cities, 1–18 (2024-03). [With my Students]*
5. *Rajaa Alqudah, **Amjed Al-Mousa**, Ayman Faza "Probabilistic modeling and simulation of drivers' lane selection and its impact on highway traffic using fuzzy-based decision-making", Journal of Intelligent & Fuzzy Systems, vol. 46, no. 4, pp. 8993-9006.*
6. *Awos Kanan, Rajaa Alqudah, **Amjed Al-Mousa**, "A Systematic Multi-Level Assessment Approach to Enhance Students' Academic Performance in Sequential Logic Design", International Journal of Engineering Education, Vol 39, No. 5, Page: 1256–1267. https://www.ijee.ie/contents/c390523.html.*
7. ***Amjed Al-Mousa**, Joud Baniissa, Tala Hashem, Tala Ibraheem, "Enhanced Electrocardiogram Machine Learning-based Classification with Emphasis on Fusion and Unknown Heartbeat Classes", Journal of Digital Health, 2023,9. [With my Students]*
8. *Aya Jafari, **Amjed A.Al-Mousa**, Iyad Jafar, "Speaker Anonymization Using Generative Adversarial Networks", Journal of Intelligent & Fuzzy Systems, vol. 45, no. 2, pp. 3345-3359, 2023. [With my Grad Student]*
9. ***Amjed A. Al-Mousa**, Rajaa Alqudah, Ayman Faza, "SimToll: A Highway Toll, Lane Selection, and Traffic Modeling Dataset", International Journal of Intelligent Transportation Systems Research, 2023.*
10. ***Amjed A. Al-Mousa**, Omar Z. ALzaibaq,Yazan Abu Hashyeh, "Deep Learning-Based Real-Time Weapon Detection System", International Journal of Computing and Digital Systems, Vol. 14, 1, 2023/08. [With my Students]*
11. *Ahmed Arrabi, **Amjed A. Al-Mousa**, "Modelling of COVID-19 time to spread and mortality rate using machine learning techniques", Int. J. Intelligent Information and Database Systems, Accepted April-2023. [With my Student]*
12. *Rajaa Alqudah, **Amjed A. Al-Mousa**, Yazan Abu Hashyeh, Omar Z. ALzaibaq, "A Systemic Comparison between using Augmented Data and Synthetic Data as means of Enhancing Wafermap Defect Classification", Computers in Industry, Vol. 145, 2023-Feb. (As of Nov. 2022 IF: 11+, SCIE-indexed)*
13. *Aws Rayyan , Mohammad Ghassan Aburas , **Amjed Al-mousa** "URL Classification Using Classical Machine Learning & Deep Learning Techniques", Cloud Computing and Data Science, 2022 Oct. 31;4(1):17-30. Available from: https://ojs.wiserpub.com/index.php/CCDS/article/view/1847. https://doi.org/10.37256/ccds.4120231847 [With my Students]*
14. *Belal Sababha, **Amjed Al-mousa**, Remah Baniyounisse, Jawad Bdour "Sampling-Based UAV Air Traffic Integration, Path Planning and Collision Avoidance", The International Journal of Advanced Robotic Systems, Feb - 2022.*
15. ***Amjed Al-Mousa** and Haneen Saleh "An intelligent IoT-Based Architecture Towards Efficient Healthcare Facilities", International Journal of Computing and Digital Systems, accepted Sep 2021. [With my Student]*
16. *Mutaz Al-Tarawneh and **Amjed Al-Mousa** "Adaptive User-Oriented Fuzzy-Based Service Broker for Cloud Services", Journal of King Saud University - Computer and Information Sciences, Accepted - Nov. 2019.*
17. *A. Faza and **A. Al-Mousa**, "PSO-Based Optimization toward Intelligent Dynamic Pricing Schemes Parameterization", Sustainable Cities and Society, 51, November 2019.*
18. ***A. Al-Mousa**, B. Sababha, N. Al-Madi, A. Barghouthi and R. Younisse. "UTSim: A framework and simulator for unmanned aerial vehicle air traffic integration, control, and communication", The International Journal of Advanced Robotic Systems, 16(5), September 2019.*
19. *W. Gharbieh and **A. Al-Mousa**, "Robotic Obstacle Avoidance in a Partially Observable Environment Using Feature Ranking", International Journal of Robotics and Automation, 34(5), September 2019. [With my Student]*
20. ***A. Al-Mousa**, "Cloud computing: Bridging the link between industry and the classroom". The International Journal of Electrical Engineering & Education, Published online Jun-2019.*

21. ***A. Al-Mousa*** *and A. Faza, "A fuzzy-based customer response prediction model for a day-ahead dynamic pricing system". Sustainable Cities and Society, 44, January 2019, pages: 265-274.*
22. ***A. Al-Mousa****, D. L. Niemann, D. J. Niemann,N. G. Gunther, M. Rahman. "Analysis of Atomic Force Microscopy Data for Surface Characterization Using Fuzzy Logic" Journal of Material Characterization, Vol. 62, No. 7, July 2011, Pages 706–715,* DOI: 10.1016/j.matchar.2011.04.001.
23. **A. Al-Mousa**, D. L. Niemann, N. G. Gunther, M. Rahman. "*Systematic Quantitative Characterization of Surface Nanostructures by Scanning Probe Microscopy of Thin-Films*" Journal of Experimental NanoScience, Vol. 6, No. 5, 2011, pages 451-463, DOI: 10.1080/17458080903531039.
24. **Al-Mousa**, A. H. Nayfeh, and P. Kachroo, "*Control of Rotary Cranes Using Fuzzy Logic,*" Shock and Vibration, Vol. 10, No. 2, 2003, pp. 81-95.
25. Z. N. Masoud, A. H. Nayfeh, and **A. Al-Mousa**, "*Delayed Position-Feedback Controller for the Reduction of Payload Pendulations of Rotary Cranes,*" Journal of Vibration and Control, Vol. 9, 2003, pp. 257-277.

Conferences

1. *G. Al-Shawabkeh, M. Abdalaziz and* ***A. Al-Mousa****, "A Two-Stage Hierarchical Skin Lesion Classification Using Transfer Learning," 2025 12th International Conference on Information Technology (ICIT), Amman, Jordan, 2025, pp. 147-153, doi: 10.1109/ICIT64950.2025.11049224.[With my Students]*
2. *R. Sufian, L. Homsi and* ***A. Al-Mousa****, "Solar Panel Fault Detection and Classification Using Transfer Learning and Deep Neural Networks," 2025 International Conference on New Trends in Computing Sciences (ICTCS), Amman, Jordan, 2025, pp. 170-175, doi: 10.1109/ICTCS65341.2025.10989447.[With my Students]*
3. **Amjed Al-Mousa,** *Badr Mansour, Hamsa Al-Dabbagh, Mohammad Radi, "Diagnosis of Polycystic Ovary Syndrome Using Random Forest with Bagging Technique", JEEIT 2023, Amman Jordan, Accepted 04-2023. [With my Students]*
4. **Amjed Al-Mousa,** *Laith AlKhdour, Hatem Bishawi, Fares AlShubeliat, "Multiclass Diabetes Detection Using Random Forest Classification", JEEIT 2023, Amman Jordan, Accepted 04-2023. [With my Students]*
5. *Raghad Jahed, Omar Aseer,* ***Amjed Al-Mousa****, "Using Personal Key Indicators and Machine Learning-based Classifiers for the Prediction of Heart Disease", International Conference on Smart Computing and Application (ICSCA2022), Hael, KSA. [With my Students]*
6. *Hamza Al-Zubaidi, Mohammed Dweik,* ***A. Al-Mousa*** *"Stroke Prediction Using Machine Learning Classification Methods", ACIT 2022 Abu Dhabi, UAE. [With my Students]*
7. *Deen Omat, Jood Otey,* ***A. Al-Mousa*** *"Stellar Objects Classification Using Supervised Machine Learning Techniques", ACIT 2022 Abu Dhabi, UAE. [With my Students]*
8. *Mahmoud Atari and* ***A. Al-Mousa*** *"A Machine-Learning Based Approach for Detecting Phishing URLs", IDSTA 2022, San Antonio, Texas, USA. [With my Student]*
9. *Ayman Faza and* ***A. Al-Mousa,*** *"An Analysis of Profits and Savings in Generation Cost for Different Dynamic Pricing Schemes", JEEIT 2021, Jordan. 10.1109/JEEIT53412.2021.9634138.*
10. *Abdulrahman Atwah and* ***A. Al-Mousa****, "Car Accident Severity Classification Using Machine Learning", 3ICT'2021, Bahrain, 29-30 Sep, 2021. (Remote) [With my Student]*
11. *Nour Abdelhadi and* ***A. Al-Mousa****, "Diabetes Detection Using Machine Learning Classification Methods", ICIT'2021, Amman, Jordan, 14-15 July, 2021. (Remote) [With my Student]*
12. *Sewar Khalifeh and* ***A. Al-Mousa****, "A Book Recommender System Using Collaborative Filtering Method", Data'2021, Petra, Jordan, 5-7 April, 2021. (Virtual) https://doi.org/10.1145/3460620.3460744 [With my Student]*
13. *Lina Ahmad and* ***A. Al-Mousa****, "Identification of Donald Trump's Tweets Using Machine Learning", SSD-CPS'2021, Monastir, Tunisia, 22-25 March, 2021. (Virtual) [With my Student]*
14. *Zain Bitar,* ***Amjed Al-Mousa****, "Prediction of Graduate Admission using Multiple Supervised Machine Learning Models" IEEE SouthEastCon 2020, Raleigh, NC, USA, March 2020. (Virtual) [With my Student]*
15. *Rahma Atallah and* ***A. Al-Mousa****, "Heart Disease Detection Using Machine Learning Majority Voting Ensemble Method", ICTCS 2019, Amman, Jordan, Oct 2019. [With my Student]*
16. ***A. Al-Mousa*** *and O. Al-Dweik, "A Machine Vision Fuzzy-Based Technique for Detection of Defected Pores in AFM Images", The IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT). Amman, Jordan April 2019. [With my Student]*
17. ***A. Al-Mousa*** *and A. Alzoubi, "Intelligent Offloading of Reports Processing in Aging Mobile Devices", The 3rd IEEE conference on Cloud & Big Data Computing. San Francisco, USA Aug 2017.*

18. ***Al-mousa,*** *"Cloud Vs Mobile Device based Reporting Optimization", First International Engineering Conference, Amman 2014.*
19. *A. Elkilani, B. Elsheikh Ali, R. Abu Romman,* ***A. Al-mousa****, B. Sababha "Resident-Aware Green Home",ICASICA 2014. [With my Students & Colleague]*
20. *K. Abughalieh,W. Qadi,K. Melkon, B. Fakes, B. Sababha, A. Al-mousa "A Compact Portable Object Tracking System", ICICS 2014. [With Students & Colleague]*
21. ***Al-mousa****, D. L. Niemann, D. J. Niemann, N. G. Gunther, M. Rahman "Surface-Independent Structure Characterization using Fuzzy Logic", ISDRS 2009.*
22. ***Al-Mousa****, D.L. Niemann, N. G. Gunther, M. Rahman. "Systematic Quantitative Characterization of Surface Nanostructures", NSTI 2009.*
23. ***Al-Mousa****, D.L. Niemann, N. G. Gunther, M. Rahman. "A Comprehensive Approach for Quantitative Characterization of Nanosturctures by Scanning Probe Microscopy". MRS Spring 2009.*
24. ***Al-Mousa****, D.L. Niemann, N. G. Gunther, M. Rahman. "A Crystal Recognition Methodology for Systematic Quantitative Characterization of Nano-Scale Crystals". Proc. Mat. Res. Soc., V8.17, March 24–28, 2008.*
25. ***A. Almousa****, S. Mourad, "Delay Faults in Dual-Rail, Self-Reset Wave-Pipelined Circuits", MWSCAC 2007.*
26. ***A. A. Al-Mousa****, A. H. Nayfeh, and P. Kachroo, "Control of Rotary Cranes Using Fuzzy Logic," 18th Biennial ASME Conference on Mechanical Vibration and Noise, DETC2001/VIB-21598 Pittsburgh, PA, September 9-12, 2001.*

Presentations (Other than conferences)

- IEEE Metro workshop – Big Data & Cloud Computing, Amman, Jordan, March 2016.
- "Hot Research topics in Computer Engineering", Phi Science Conf, Amman, Jordan 2015.
- *"A Comprehensive Approach for Quantitative Characterization of Nanosturctures by Scanning Probe Microscopy"*, SIGMA XI 2009.
- "Control of Rotary Cranes Using Fuzzy Logic", 8th Conf. on Nonlinear Vibrations, stability And Dynamics of structures. Blacksburg, VA 2000.

Conference & Workshop Attendance

- ICIT, 2025 Amman, Jordan.
- JEEIT, 2023 Amman, Jordan.
- ACIT, 2022 Abu Dhabi, UAE.
- IDSTA 2022, USA.
- DATA 2021, Jordan.
- SSD 2021 Tunisia.
- IEEE SouthEastCon 2020, Raleigh, NC, USA.
- ICTCS, 2019, Amman, Jordan.
- JEEIT, 2019, Amman, Jordan.
- CBDCOM 2017, San Francisco, USA.
- Phi Science Conference 2015, Amman, Jordan.
- FIEC 2014, Amman, Jordan.
- ICASICA 2014, New York City, NY, USA.
- Greylock Data Summit, LinkedIn Headquarters, Mountain View, CA, USA.
- Strata 2011, Santa Clara, CA, USA.
- ISDRS 2009, College Park, MD, USA.
- MRS 2009, San Francisco, CA, USA.
- NSTI 2009 Houston, TX, USA.
- MRS 2008, San Francisco, CA, USA.
- MWSCAS 2007, Montreal Canada.
- ASYNCH 2006, Berkeley, CA, USA.
- 8th Conf. on Nonlinear Vibrations, stability And Dynamics of structures. Blacksburg, VA 2000.

Professional Memberships & Activities

- Sigma Xi.
- IEEE Member since 1997, IEEE senior member in 2013.
- IEEE Computer Society.
- IEEE Systems, Man, and Cybernetics Society.
- IEEE Communications Society.
- IEEE Computational Intelligence Society.
- MRS Member since 2008.
- Volleyball.

Interpersonal Skills

- Problem-solving capabilities.
- Excellent communications skills
- Results-oriented.
- Fast learning capabilities.
- Self-motivated.

Technical Skills

- **Programming Languages:**
  - Python, C, Java, Visual Basic, VBS,C#, R, ASP, HTML, Hyper-Script, Lisp, Fortran, Perl, Assembly, Windows Applications Programming and SQL database programming (Informix & Oracle).
  - Verilog, Micro-controllers programming.
- **Operating Systems:** UNIX and Microsoft Windows.
- **Database Systems:** Oracle, Informix, Hadoop.
- **Applications/Tools:** MATLAB, Pentaho, Mentor Graphics, Synopsis, SyniCAD, AutoCAD, ORCAD, DADS, EWB and MS Office.

Certificates

- Project Management.
- Higher Communication Skills.
- Presenting in Technical Environment.
- Pentaho Training.

Reviewer & Referee

- IEEE Systems Journal
- Journal of Intelligent & Fuzzy Systems
- MDPI: Computers, Applied Sciences, Sensors, Diagnostics, Healthcare, and JSME.
- Arabian Journal of Science & Engineering
- International Journal of Advanced Robotic Systems
- International Journal of Electrical Engineering Education
- Journal of Fuzzy System Applications
- SSD 2021
- JJCIT
- ICTCS 2019 & 2017
- NTP 2014
- Maejo International Journal of Science & Technology 2013
- MILCOM 2007
- VTS 2007

References

- *Available upon request.*