Mohammad AL-jamal

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EDUCATION

The Hashemite University (HU) , Zarqa, Jordan
MS. in Mechanical Engineering/ Energy Systems, 2021 – Feb 2024, GPA=3.59/4.0 - Excellent

Thesis Topic: Prediction and Classification for Mechanical Properties of Green Composite Material Using Artificial Neural Network.

Al-Balqa' Applied University (BAU), Irbid, Jordan
B.Sc. in Mechanical engineering / Production and Machinery, 2014-2019,

RESEARCH & TEACHING INTERESTS

- Prediction and Classification of Mechanical Properties in Green Composite Materials: Focused on utilizing Artificial Neural Networks to predict and classify the mechanical properties of sustainable materials.
- Energy Systems and Sustainable Technologies: Researching innovations in energy systems, including renewable energy sources and energy-efficient technologies for mechanical systems.
- Application of AI in Mechanical Engineering: Interested in exploring the integration of machine learning techniques to enhance control systems, material selection, and system optimization.
- Mechanical Design and Thermodynamics: Specializing in the design and analysis of mechanical systems with a focus on thermodynamics and fluid mechanics.
- I have extensive teaching experience across various fields of Mechanical Engineering. I am committed to introducing new approaches to teaching existing courses, with the aim of empowering students to become leaders in their respective fields. In my teaching, I emphasize critical thinking, creativity, collaboration, and communication skills, alongside developing strong problem-solving abilities. I recognize the importance of student-mentor relationships in student development, and I seek to create research opportunities for undergraduates, encouraging their participation as early as the summer after their freshman year.

WORK EXPERIENCE

Assistant Dean for Accreditation and Quality Affairs | Jadara University, Technical Faculty
November 2025 - Present

- Overseeing quality assurance and accreditation processes in alignment with university strategy and national standards.
- Promoting a culture of quality and continuous improvement across academic and administrative units.
- Preparing and supervising institutional performance and accreditation reports.
- Identifying areas for program enhancement and coordinating development initiatives.
- Leading quality-related committees, workshops, and activities to foster academic excellence.

Head of Engineering Department | Jadara University, Technical Faculty
April 2025 - Present

- Supervising academic programs in Renewable Energy and Mechanical Engineering.
- Coordinating faculty members and ensuring the quality of teaching, research, and student development.
- Contributing to strategic planning, curriculum development, and industry collaboration.
- Representing the department in university committees and external partnerships.

Lecturer | Jadara University, Technical Faculty, Department of Renewable Energy

March 2025 – Present

- Teaching undergraduate courses in renewable energy, thermodynamics, and energy systems.
- Developing course materials and supervising lab experiments in renewable energy applications.
- Advising students on research projects related to sustainable energy and green technologies.
- Engaging in curriculum development and enhancing teaching methodologies.

Research Assistant | Jordan University of Science and Technology (JUST)
Supervisor: Prof. Mohammed T. Hayajneh
Jan 2025 – Present

- Conducting research on predicting the mechanical performance of green composite materials using artificial intelligence.
- Developing and applying AI-based models, such as Artificial Neural Networks (ANN) and Support Vector Machines (SVM), to analyze composite materials.
- Collecting, processing, and analyzing experimental data to enhance predictive accuracy.
- Assisting in writing research papers and preparing conference presentations.
- Collaborating with faculty members and research teams on sustainable material innovations.

BTEC International Curriculum Teacher | Ministry of Education, Jordan.
Feb 2024 – March 2025

- Curriculum Development: Develop and implement a practical and theoretical mechanical engineering curriculum for secondary students, emphasizing project-based learning.
- Lecturing: Deliver engaging mechanical engineering lectures and workshops, covering principles, design, thermodynamics, fluid mechanics, and materials science with varied teaching methods.
- Lab Management: Manage the mechanical engineering lab, maintaining equipment and enforcing safety, including student safety training.
- Industry Engagement: Foster industry links for student internships, guest lectures, and practical project exposure, bridging academia and real-world applications.
- Student Assessment: Create and use assessment tools to measure student progress, providing personalized feedback and support for academic and personal development.

Teaching Assistant | The Hashemite University, Zarqa, Jordan.
2021 – 2024

- Supporting the lead teacher with lesson planning.
- Assisting in grading and creating instructional materials.
- Help students with classwork, homework, and assignments.
- Providing individualized instruction and support to students requiring extra assistance.
- Conducting small group instruction and one-on-one tutoring sessions.
- Monitoring and supervising students in classroom settings.
- Providing feedback to the lead teacher on student progress.

Supervisor Engineer | Jordanian Ministry of Public Works Housing, Irbid, Jordan.
2022 – 2023

- Overseeing daily operations and maintenance activities of the garages.
- Managing a team of mechanics and technicians.
- Ensuring vehicles are repaired and maintained according to established standards and procedures.
- Maintaining records of repairs and maintenance activities.
- Ensuring compliance with all safety regulations and standards.
- Ensuring proper and effective use of equipment and tools.

PUBLICATIONS

- Mughaid, A., AlJamal, M., Issa, A. A., AlJamal, M., Alquran, R., AlZu'bi, S., & Abutabanjeh, A. A. (2023, October). Enhancing cybersecurity in scada iot systems: A novel machine learning-based approach for man-in-the-middle attack detection. In 2023 3rd Intelligent Cybersecurity Conference (ICSC) (pp. 74-79). IEEE.

SUBMITTED PAPER

- Artificial Intelligence for Predicting the Mechanical Properties of Natural Fiber-Reinforced High-Density Polyethylene (HDPE) Composites Using Random Forest Modeling | Journal: Discover Materials
- Modeling the Performance of Agro-waste PP Composite Materials for Better Environmental Management with Quadratic Support Vector Machine Learning Approach | Journal: Archive of Applied Mechanics
- Artificial Neural Network Modeling for Predicting Mechanical Properties of Mediterranean Green Composites. | Journal: Intelligent Material Systems and Structures.
- Optimized Prediction and Multi-Class Classification of Mechanical Properties in Green Composites Using adaptive Neural Networks. | Journal: Fibers and Polymers.

CONFERENCES & PRESENTATION

• Intelligent Cybersecurity Conference (ICSC), [San Antonio, TX, USA] Title: "[Enhancing Cybersecurity in SCADA IoT Systems: A Novel Machine LearningBased Approach for Man-in-the-Middle Attack Detection]" Date: [23 October 2023 – 25 October 2023]

CERTIFICATIONS

- Fundamentals of Accelerated Computing with CUDA C/C++, NVDIA.
- Fundamentals of Deep Learning, NVDIA.

TECHNICAL & SOFT SKILLS

SOFTWARE

- MATLAB.
- Wide experience of using Microsoft Excel, PowerPoint and Word.
- AutoCAD.
- SOLIDWORKS.
- Minitab.

COMPUTER PROGRAMMING:

- MATLAB,
- Office Software.
- latex.
- Minitab.

PERSONAL SKILLS

- Excellent at organizing and leading research teams based on the most popular fields of study.
- Excellent in applying AI and Material Selection concepts to real-world research situations.
- Excellent in applying AI in Control Systems concepts to real-world research situations.

LANGUAGES

- English: proficient.
- Arabic: Native.

REFERENCES:

- Dr. Rami Ahmad Al-jarrah
  Position: Associate Professor, HU
  E-mail: ramia@hu.edu.jo

- Dr. Faris AL-Oqla
  Position: Associate Professor, HU
  E-mail: fmaloqla@hu.edu.jo

- Prof. Mohammed T. Hayajneh
  Position: Professor, JUST
  E-mail: hayajneh@just.edu.jo