

**Name: Dr. Nader Ghareeb****Rank: Assistant Professor - Mechanical Engineering**

Personal Information

Nationality: German**AU Joining Date:** 18 Aug 2013**E-Mail Address:** n.ghareeb@au.edu.kw

Professional Information

Education:**Qualification:** Doctorate**Major:** Mechanical Engineering**College/University:** RWTH Aachen University of Technology, Germany**Year:** 2013**Qualification:** Masters**Major:** Simulation Techniques in Mechanical Engineering**College/University:** RWTH Aachen University of Technology, Germany**Year:** 2005**Qualification:** Bachelor**Major:** Mechanical Engineering**College/University:** Beirut Arab University, Lebanon**Year:** 2001**Specialization:**

Mechanical Engineering

**Current Academic
Position:**

Assistant Professor

**Current Professional
Positions:**

Assistant Professor - Mechanical Engineering

**Previous
Administrative
Position Held:**

- Coordinator of the Spring2024 AU Engineering Students Graduation Exhibition (May 2024)
- Coordinator of the Fall2023/2024 AU Engineering Students Graduation Exhibition (December 2023)

	- Coordinator of the 6th AU Engineering Students Graduation Exhibition (May 2017) - Workshop Manager (Feb 2021 - May 2025)
Previous Academic Positions Held:	- 09/2018 – 08/2020 Adjunct Academic at Central Queensland University (CQU), Australia - 10/08 – 07/13 Teaching and Research Assistant, Institute of General Mechanics, RWTH Aachen University of Technology, Aachen, Germany - 08/05 – 06/08 Research Assistant, Flensburg University of Applied Sciences, Flensburg, Germany - 03/05 – 07/05 Research Assistant, Department of Materials Science, RWTH Aachen, Germany
Fellowships and Honors:	- Teaching Excellence Award at AU, October 2022 - Certificate of “Best Paper Award” received during the “ICSV 2018: 20th International Conference on Sound and Vibration, 23-24 April 2018, Boston, USA - Acquisition of “NEBOSH International General Certificate in Occupational Health and Safety”, November 2017 - Certificate of “Best Paper Award” received during the “ACMSI 2016: 18th International Conference on Materials and Structural Integrity, August 4-5, 2016, Vancouver, Canada - Acquisition of “TAE40110 Certificate IV in Training and Assessment”, May 2016 - Membership of INSTICC - Institute for Systems and Technologies of information, Control and Communication, since 2014 - Member in Association of German Engineers (VDI Verein Deutscher Ingenieure e.V.), since 2004 - Member in Order of Engineers and Architects in Beirut, since 2001
Teaching Experience:	- Since 08/2013: Assistant Professor at Mechanical Engineering Department of AU, Kuwait

	- 10/08 - 04/13 Teaching and Research Assistant, Institute of General Mechanics, RWTH Aachen University of Technology, Aachen, Germany
Industrial and Technical Experience:	- 03/12 - 04/13 Analysis and optimization of a needle nozzle, Order of Grindaix GmbH, Aachen, Germany Activities: Static simulation of a product prototype Finite element analysis to find out the position and value of peak stresses Geometrical optimization to ensure identical discharge throughout all nozzles - 02/09 - 12/10 Dynamic Analysis of a spindle lifting beam, Order of AREVA NP GmbH, Erlangen, Germany Activities: Modeling and discretization of the mechanical system Analytical computation of the active loads Dynamic finite element simulation of the system with all its components - 10/08 - 03/09 Modeling and Analysis of a furniture fitting system, Order of Huwil-Werke GmbH, Ruppichteroth, Germany Activities: Construction of a CAD model of the structure Execution of a multi-body-system and finite-element analysis to simulate the motion of the system and calculate the state of stresses on critical elements Determination of position and value of peak stresses - 12/01 - 08/02 HVAC Engineer, G.M. Al-Zahrani Establishment, Jeddah, Saudi Arabia
Research Interest:	- Design and Control of Smart Structures - Finite Element Analysis - Multi-body Simulation - Blast Simulation - Crack Analysis and Modeling - Wind Turbines
Research Grants:	- 11/2023 - 05/2025: KFAS funded research grant: "Digitalization of Office Ergonomics Concept for Employees' Wellbeing, Resilient and Innovative Workplace" - 01/2023 – 07/2024: AU funded research grant: "Development of an Organic Rankine Cycle (ORC) System Powered by a Solar Concentrator Optimized for Residential Application in Kuwait"

	- 03/2021 - 04/2022: AU funded research grant: "Knee Mechanics Sensitivity Analysis Following ACL Reconstruction" - 06/2019 - 06/2020: AU funded research grant: "Enhancement of Student Learning and Interaction in Engineering Programs at Australian University by Using Audience Response Systems" - 06/2018 - 06/2020: Joint Project with CQU University: "Review and Simulation of Crack Detection Methodologies for Industrial Applications" - 03/2012 - 03/2013: Funded research project with company Grindaix GmbH, Aachen, Germany: "Analysis and optimization of a needle nozzle" - 02/2009 - 12/2010: Funded research project with company AREVA NP GmbH, Erlangen, Germany: "Dynamic Analysis of a spindle lifting beam" - 03/2021 - 03/2013 Funded research project with company Huwil-Werke GmbH, Ruppichteroth, Germany: "Modeling and Analysis of a Furniture Fitting System"
Research and Publications including Journal and Books:	- August 2025: Nader Ghareeb, Abeer Alanazi, Ahmad Sedaghat, Mohamad Hussein Farhat, Arash Mehdizadeh, Hayder Salem, Mohammad Nazififard, Ali Mostafaeipour, "Integrating experimental and theoretical approaches for enhanced machine learning modeling of solar radiation", Engineering Science and Technology, an International Journal, 70, doi: https://doi.org/10.1016/j.jestch.2025.102156 - April 2025: FARHAT Mohamad Hussein, NAHAS Michel, GHAREEB Nader, and MUNISAMI Kevin, "ENHANCING TECHNICAL AND INTERPERSONAL SKILLS IN ENGINEERING EDUCATION THROUGH AUDIENCE RESPONSE SYSTEM (ARS) IN PROJECT-BASED LEARNING (PBL)", International Journal of Engineering Pedagogy, 9 (4), (ISSN 6573 – 0513). - March 2025: Abeer Abdullah Al Anazi, Nader Ghareeb, and Ahmad Sedaghat, "Decarbonization and sustainability of solar PV panel-integrated greenhouses in challenging climates", International Journal for Housing Science and Its Applications, 46 (1), 46-57, doi: https://doi.org/10.70517/ijhsa46106 - June 2024: Mohamad H Farhat, Youssef Mazloun, Samer Wakim, Wissam Bou Nader, Meshari ALEbrahim, Nader Ghareeb, "Energy optimization of parabolic dish solar concentrator coupled to organic Rankine cycle: Experimental and analytical investigation of cavity receiver design and covering effects", International Journal of Thermofluids, 23 (100730), doi: https://doi.org/10.1016/j.ijft.2024.100730

- February 2024: Abbas Amini, Narjes Firouzkouhi, Marziyeh Nazari, **Nader Ghareeb**, Chun Cheng and Bijan Davvaz, "Artificial intelligent Global Online Learning (GOL) theory by generalized n-ary fuzzy relation", Artificial Intelligence Review, 57(68), pp.1-31, doi: <https://doi.org/10.1007/s10462-023-10691-1>
- May 2023: **N. Ghareeb**, "Design and Analysis of a Solar Operated Lawn Mower", International Journal of Mechanical Engineering and Robotics Research, 12(3), pp.169-174, doi: 10.18178/ijmerr.12.3.169-174
- February 2023: **N. Ghareeb**, "Design and Simulation of a User-Friendly Solar Operated Grass Cutting Device", ARPN Journal of Engineering and Applied Sciences, 18(4), pp.257-263, ISSN: 1819-6608, doi: <https://doi.org/10.59018/022345>
- May 2022: **N. Ghareeb**, K. Alsaeed, A. Aldeei, B. Almutairi and N. Ghaleb, "Design of a Portable Efficient and User-Friendly Motor-Powered Hacksaw", Journal of Mechanical Engineering Research and Developments, 45(2), pp.78-86, ISSN: 1024-1752
- May 2022: **N. Ghareeb** and M. Farhat, "Effect of the Finite Element Type on Modeling, Analysis and Control of a Cantilevered Beam", Journal of Mechanical Engineering Research and Developments, 45(2), pp.43-52, ISSN: 1024-1752
- June 2021: **N. Ghareeb**, S. Soleimani, M. Farhat and K. Khanafer, "Analytical and Numerical Calculations of Deformation in Piezoelectric Bimorphs with Variable Piezo-thicknesses", International Journal of Applied Engineering Research, 6(2), pp.29-35
- March 2021 M. Farhat, M. Nahas, **N. Ghareeb** and R. El Khoury, "Enhancement of Student Learning and Interaction in Engineering Programmes Using an Audience Response System", World Transactions on Engineering and Technology Education, vol.19, no.2, pp. 209-214
- December 2019: M. Farhat, B. Virdee and **N. Ghareeb**, "Microstrip Bandpass Filter with Wide Stopband and High Out-of-Band Rejection", American Journal of Engineering and Applied Sciences, doi: 10.3844/ajeassp.2019.543.548
- November 2018: **N. Ghareeb** and M. Farhat, "Smart Materials and Structures: State of the Art and Applications", Nano Tech Appl. 2018; 1(2): 1-5, ISSN: 2639-9466
- August 2018: S. Soleimani, **N. Ghareeb** and N. Shaker, "Modeling, Simulation and Optimization of Steel Sandwich Panels under Blast Loading", American Journal of Engineering and Applied Sciences, ISSN Print: 1941-7020

	- January 2016: N. Ghareeb, M. Gaith, T. Alloush and M. Al-Sarraf, "Energy Harvesting from Vibrating Piezo-Electric Structures", Journal of Robotics and Mechanical Engineering Research, vol. 1, no. 3, pp. 14-21 - December 2012: N. Ghareeb and R. Schmidt, "Modelling and Control of a Smart Beam", PAMM Appl. Math. Mech., vol. 12, pp.703-704 - August 2009: N. Ghareeb and Y. Radovicic, "Fatigue Analysis of a Wind Turbine Power Train", DEWI Magazin, Germany, no. 35, August 2009, pp.12-16
Paper Presentations at Professional Conferences:	- May 2025: Mohamad Farhat, Yousef Mazloun, Samer Wakim, Wissam Bou Nader, Meshari Al-Ebrahim, Nader Ghareeb, "Optimizing Solar Parabolic Concentrators with Cylindrical and Conical Receivers for Improved Thermal Performance", 2025 10th International Conference on Sustainable and Renewable Energy Engineering (ICSREE 2025), Nice, France, doi: 10.1051/e3sconf/202563602003 - June 2023: Nader Ghareeb, Martin Jaeger, Perry R. Hessenauer, Desmond Adair, "Constructivist Principles as Used for Enhancing Active Learning Case: Engineering Thermodynamics", Proceedings of 19th International CDIO Conference, hosted by NTNU, Trondheim, Norway - April 2018: N. Ghareeb and R. Schmidt: "Implementation of State-Space and Super-Element Techniques for the Modeling and Control of Smart Structure with Damping Characteristics", Proceedings of ICSV2018: 20th International Conference on Sound and Vibration, Boston, USA, vol. 20, no. 4, pp. 1100-1109 - May 2017: N. Ghareeb, M. Gaith and S.M. Soleimani, "Smart structures: Modeling, analysis, and control with different strategies", Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, and Civil Infrastructure 2017, Proc. of SPIE Vol. 10169, doi: 10.1117/12.2258580 - August 2016: N. Ghareeb, M. Gaith and S.M. Soleimani, "Modeling, Analysis and Control of a Smart Composite Structure", Proceedings of the ICMSI 2016: 18th International Conference on Materials and Structural Integrity, Vancouver, Canada, vol. 10, no. 8, pp. 679-682 - August 2016: S.M. Soleimani, N. Ghareeb, N. Shaker and M. Siddiqui, "Modeling and Simulation of Honeycomb Steel Sandwich Panels under Blast Loading", Proceedings of the ICMSI 2016: 18th International Conference on Materials and Structural Integrity, Vancouver, Canada, vol. 10, no. 8, pp. 667-676 - January 2015: S.M. Soleimani and N. Ghareeb, "Finite Element Modeling of Steel Beams under Blast Loading", Proceedings of the 5th International

	Workshop on Performance, Protection & Strengthening of Structures under Extreme Loading, Michigan, USA, pp. 530-537 - September 2014: N. Ghareeb and R. Schmidt, "Active Vibration Control of a Super Element Model of a Thin-walled Structure", Proceedings of the 11th International Conference on Informatics in Control, Automation and Robotics, Vienna, Austria, vol. 1, pp.657-664 - June 2013: N. Ghareeb and R. Schmidt, "Design and Implementation of a Linear Controller on a Reduced Model of a Smart Structure", Proceedings of Compdyn 2013 4th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Kos, Greece, Paper no. 1585 - May 2013: N. Ghareeb and R. Schmidt, "The Active Control of a Reduced Model of a Smart Structure", Proceedings of ICCES013 International Conference on Computational & Experimental Engineering and Sciences, Seattle, USA - July 2012: N. Ghareeb and R. Schmidt, "Modeling and Active Vibration Control of a Smart Structure", Proceedings of the 9th International Conference on Informatics in Control, Automation and Robotics, Rome, Italy, vol. 1, pp.142-147 - March 2009: N. Ghareeb and D. Weichert, "Combined Multi-Body-System and Finite Element Analysis of a Complex Mechanism", Proceedings of the 11th SAMCEF User Conference, Paris, France
College Service including committee Membership:	- Departmental validation committee - Departmental PBL committee - Departmental CT committee - Coordinator of the Spring2017 AU Engineering Students Graduation Exhibition - Coordinator of the Fall2023 AU Engineering Students Graduation Exhibition - Coordinator of the Spring2024 AU Engineering Students Graduation Exhibition
National Service:	NA
College Committees:	NA