



Name: Dr. Sadeq Damrah

Rank: Assistant Professor – Mathematics & Physics

Personal Information

Nationality:	Jordanian
AU Joining Date:	18 Aug 2013
E-Mail Address:	s.damrah@au.edu.kw

Professional Information

Education:	- PhD, World Islamic Sciences & Education (W.I.S.E.) University, Amman, Jordan, 2016 Thesis: A Proposed Home Financing Model in Islamic Banks: Interdisciplinary Approach Highlighting Utilizing Fuzzy Logic to Improve Risk Assessment - MA Applied Mathematics, University of Alabama, Alabama, USA, 2008 Project: Application of Patch Local Correlation as an Image Denoising Technique - BA Mathematics, Manhattanville College, New York, USA, 2005 Project: Fermat's Last Theorem - Level 3 International Award in Delivering Training, Highfield Awarding Body for Compliance (HABC), UK, 20/3/2015 – 25/3/2015 - TAE40110 Certificate IV in Training and Assessment, TasTAFE-Tasmanian Government, Australia, 20/8/2013 – 10/2/2014 - Professional Certificate in Financial Analytics, University of Sains Malaysia, Malaysia, 2021 - SOA Exam P: Probability for Actuaries Part 1 By Actuary Clayton Zaluski (Udemy Prep course - Work in Progress) - Introduction to Data Mining Graduate Course - Stanford University
Specialization:	- Applied Mathematics and Financial Mathematics - Risk Management and Market Microstructure

	- Fuzzy Logic, Neural Networks, and Computational Modelling - Islamic Finance and Shariah-Compliant Financial Modelling
Current Academic Position:	- Assistant Professor – Mathematics & Physics
Current Professional Positions:	- Expert/Consultant: GLG Network, 2023-present - Affiliate Member - Society of Actuaries (SOA), 2023-present - Member: IEEE, 2023-present - Entrepreneurship Committee: 2nd International Conference on Global Entrepreneurship Summit, Montreal, Canada, 2023 (Hybrid) - Committee Member: 2nd World Conference on Physics and Mathematics, Paris, France, 2023 (Hybrid) - Eurasia Conferences - Member of SASE the Society for the Advancement of Socio-Economics, Germany - Fellow of the Australian Academy of Business Leadership, Australia - Member of the Jordanian Society of Islamic Banking and Finance, Jordan - Editorial Board Member (Guest Editor): PLOS ONE - Editorial Board Member: Journal of Global Entrepreneurial Management - Scitech Journals, Natural Resources Conservation and Research - Enpress Publisher, Forum for Economic and Financial Studies - Academic Publishing, Computational Mathematics and it's applications - Peertechz - Reviewer: Environmental Science and Pollution Research - Springer, Arab Gulf Journal of Scientific Research - Emerald, Archives of Advanced Engineering Science - Bonview Publishing, Green and Low-Carbon Economy - Bonview Publishing
Previous Administrative Position Held:	- Principal Investigator (PI), multiple funded research projects by Australian University - Kuwait, 2021-present - Internship Faculty Supervisor, College of Engineering, Australian University - Kuwait, Summer 2019 - Head of Mathematics & Academic Coordinator, Universal Civilizations Academy, Amman, Jordan, 2012-2013 - Head of Mathematics, Modern American School, Amman, Jordan, 2011-2012
Previous Academic Positions Held:	- Instructor, Australian University-Kuwait, 2013-2016 - Teacher and Administrator, International Schools in Jordan, 2009-2013 - Graduate Teaching Assistant, University of Alabama, 2005-2009
Fellowships And Honors:	- Best Presentation Award, Paper title: "A deep learning approach for dealing with tabular data in crop yield prediction" presented at IEEE International Conference on Artificial Intelligence for Learning and Optimization (ICoAILO), Bali, Indonesia, 2025. - Long service Award, AU, 2023

	- Invited Speaker: 2nd International Meet on applied science, engineering and technology ASETMEET 2023, Vancouver, Canada (Virtual)- Albedo Meetings - Best Paper Award: "Financial Inclusion and Bank Stability - Comparative Evidence between Islamic and non-Islamic banks" paper from the Australian University - Kuwait-funded project won the prestigious IMEFM Best Paper Award during the recent 23rd Malaysian Finance Association International Conference, August 2021 (MFAIC 2021). IMEFM is the International Journal of Islamic and Middle Eastern Finance and Management which is a Q2 journal. - Research Grants by the Australian University - Kuwait, 2021-present - Research Grant by LSE/KFAS - Kuwait, 2021-2023 - University of Alabama Graduate Teaching Assistantship, 2005-2008 - Manhattanville College Academic Merit Scholarship, 2001-2005
Teaching Experience:	- Instructor, Australian University - Kuwait, 2013-2016 - Teacher, International Schools in Jordan, 2009-2013 - Graduate Teaching Assistant, University of Alabama, 2005-2009 - Tutor/Supplementary Instructor, Manhattanville College, 2002-2005
Industrial And Technical Experience:	- Principal Investigator, Applied and Financial Mathematics and Statistics Group, Australian University-Kuwait, 2021-present - Machine Learning/Data Mining consultant for multiple research projects, 2024-present - Expert/Consultant: GLG Network, 2023-present - Internship Faculty Supervisor, College of Engineering, Australian University-Kuwait, Summer 2019 - Intern, International Islamic Arab Bank, 2009 - Reporter/Translator, Jordan Times Newspaper, 2010
Research Interest:	- Applied Mathematics and Financial Mathematics - Risk Management and Market Microstructure - Fuzzy Logic, Neural Networks, and Computational Modelling - Islamic Finance and Shariah-Compliant Financial Modelling
Research Grants:	- Project title: A Fuzzy Logic Framework for Intangible Asset Valuation and Risk Assessment: Comparative Insights from Kuwait and Australia, Funded by Australian University - Kuwait, 2025–2027, Principal Investigator Dr. Sadeq Damrah, Total Budget: 3,300 USD - Project title: Strategic Competition and Behavioral Biases: A Multi-Phase Investigation into Overconfident Market Makers and Insider Trading, Funded by Gulf University for Science and Technology (GUST) - Kuwait, 2024–present, Principal Investigator Dr. Wassim Daher, Total Budget: 10,000 USD.

	- Project title: Rapid Indoor Soiling Testing (RIST) System for Soiling and Dust Control in Photovoltaics: Novel System, Measurement Process, and Prediction Models, Funded by Kuwait Foundation for the Advancement of Sciences (KFAS), 2024–present, Principal Investigator Dr. Sadeq Damrah, Total Budget: 30,000 USD. - Project title: Mathematical Modeling for Exploring Spread of Cyberattacks through IoT Devices, Funded by Australian University - Kuwait, 2023, Principal Investigator Dr. Sadeq Damrah, Total Budget: 2,000 USD - Project title: Evaluating the Rheological Properties of Synthetic-Based Muds (SOBMs), Well Drilling Fluids with Nanoparticles Using a Taylor-Couette Device in Laminar and Turbulent Flows, Funded by Australian University - Kuwait for 1 year, May 2023, Principal Investigator Dr. Biltayib Misbah, Total Budget: 5,000 USD - Project title: Breaking the Internal Combustion Engine Reign: A Mixed-Methods Study of Attitudes Towards Using and Purchasing Electric Vehicles in Kuwait, Funded by KFAS (Kuwait Foundation for Advancement of Sciences) for 2 years, joint with London School of Economics and Political Science Middle East Centre, September 2021, Principal Investigator Dr. Andri Ottesen, Total Budget: 90,000 USD - Project title: Impact of Covid-19 Pandemic on Stability and Resilience of Islamic Banks in Kuwait: Statistical Evidence and Mathematical Modeling, Funded by Australian University - Kuwait for 1 year, March 2021, Total Budget: 5,000 USD
Research and Publications including Journal and Books:	-Paper title: "Mathematical analysis of the dynamics of cyberattack propagation in IoT networks" published in PLOS ONE (Q1), May 2025. -Paper title: "Review of the Single-Period Kyle Model (1985): Foundations, Extensions, and Interdisciplinary Future" accepted as a book chapter in <i>Networks, Games, and Dynamics: From Dynamical Systems and Stochastic Analysis to Transportation Theory and Optimal Control</i>, Springer, forthcoming 2025. -Paper title: "Numerical solution of the intuitionistic fuzzy complex heat equation with intuitionistic complex Dirichlet boundary conditions via the explicit finite difference method" published in <i>European Journal of Pure and Applied Mathematics</i> (Q2), 2025. -Paper title: "Overconfidence and insider trading with correlated signals" published in <i>MethodsX</i> (Q2-Elsevier), 2025.

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- Paper title: "Strategic competition between insiders with public information and overconfident market makers" published in Journal of Dynamics and Games (Q2-AIMS), 2025.

 - Paper title: "Professional identity and its relationships with AI readiness and interprofessional collaboration" published in PLOS ONE (Q1), May 2025.

 - Paper title: "Bipolar valued fuzzy subgroups, normal subgroups, and homomorphisms: A generalization based on dib's fuzzy space" published in European Journal of Pure and Applied Mathematics (Q2), forthcoming 2025.

 - Paper title: "Examining macroeconomic factors and environmental sustainability: An OLS regression analysis of the impact of exports, imports, governmental budget, and oil products on CO₂ emissions in Jordan" published in Edelweiss Applied Science and Technology (Q3), December 2024.

 - Paper title: "Human capital and manufacturing activities under environmentally-driven urbanization in the MENA region" published in Frontiers in Environmental Science (Q1), 2024.

 - Paper title: "Selection process based on new type neutrosophic interval-valued set applied to logarithm operator" published in International Journal of Neutrosophic Science (Q1-IJNS), 2024.

 - Paper title: "Type-I extension Diophantine neutrosophic interval valued soft set in real life applications for decision making" published in International Journal of Neutrosophic Science (Q1-IJNS), 2024.

 - Paper title: "Mathematical modeling for exploring spread of cyberattacks through IoT devices" published as a Springer Book Chapter in SEMIT 2023 proceedings, Ankara, Turkey, 2023.

 - Paper title: "Unveiling the relationship of ESG, fintech, green finance, innovation and sustainability: case of Gulf countries" published in Springer - Environmental Science and Pollution Research, which is a Q1 journal, October 2023

 - Paper title: "Generalized Fuzzy Hypergraph for Link Prediction and Identification of Influencers in Dynamic Social Media Networks" published in Elsevier - Expert Systems with Applications, which is a Q1 journal, September 2023
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- Paper title: "A Greener Kuwait: How Electric Vehicles Can Lower CO2 Emissions" Published in The LSE (London School of Economics and Political Science) Middle East Centre Paper Series, August 2023
 - Paper title: " A Mathematical Study of the Omicron Variant in a Discrete-Time Covid-19 Model" Published in The European Physical Journal Plus - Springer Nature, which is a Q2 journal, June 2023
 - Paper title: " Do natural resource dependence, economic growth and transport energy consumption accelerate ecological footprint in the most innovative countries? The moderating role of technological innovation" Published in Gondwana Research - Elsevier, which is a Q1 journal, April 2023
 - Paper title: "A Linear Mixed Model Approach for Determining the Effect of Financial Inclusion on Bank Stability: Comparative Empirical Evidence for Islamic and Conventional Banks in Kuwait" Published in MDPI Mathematics, which is a Q1 journal, April 2023
 - Paper title: "Employing the Panel Quantile Regression Approach to Examine the Role of Natural Resources in Achieving Environmental Sustainability: Does Globalization Create Some Difference?" Published in MDPI Mathematics, which is a Q1 journal, December 2022
- Paper title: " How does financial inclusion affect environmental degradation in the six oil exporting countries? The moderating role of information and communication technology" Published in Frontiers in Environmental Science, which is a Q1 journal, October 2022
- Paper title: Does culture influence whether a society justifies tax cheating?, published in the Emerald - JFC Journal of Financial Crime, Q2 journal, January, 2020.
- Paper title: Mathematical Modelling of the Flow Rate in a Marsh Funnel, submitted to the Journal of Energy Technology Research, September 13, 2016.
- Paper title: A Clarke and Wright Improved Algorithm to Solve the Vehicle Routing and Traveling Salesman Problem, published in the Global Journal of Enterprise Information System, January-March, 2016.
- Paper title: A Mathematical Approach to Optimize Seed Selection Process in Permaculture, published in the International Journal of Recent Scientific Research, January 2015.

	Paper title: A Combinatorial Optimization Approach to Solve the Synchronous Optical Network (SONET) Problem, published in the Global Journal of Enterprise Information System, April-June 2014.
Paper Presentations at Professional Conferences:	-Paper title: "Novel viscometer design for investigation of the rheological properties of drilling fluid at low and high shear rate conditions" presented at SPE Nigeria Annual International Conference and Exhibition, Lagos, Nigeria, Society of Petroleum Engineers (SPE), 2025. -Paper title: "A deep learning approach for dealing with tabular data in crop yield prediction" presented at IEEE International Conference on Artificial Intelligence for Learning and Optimization (ICoAILO), Bali, Indonesia, 2025. -Paper title: "Do Artificial Intelligence and Digital Transformation Enhance or Hinder Sustainability? A Case Study from GCC" presented at the 7th International Conference on <i>Entrepreneurship for Sustainability & Impact: Redefining Business in the Era of AI Revolution (ESI 2024)</i>, Qatar University, Doha, November 2024. -Paper title: "Strategic competition between insiders with public information and overconfident market makers" presented at SEMIT 2024 – International Conference on Science, Engineering Management and Information Technology, Ankara, Turkey, 2024. -Paper title: "Mathematical modeling for financial risk assessment and loan management" published as a Springer Book Chapter in SEMIT 2024 proceedings, Ankara, Turkey, 2024. -Paper title: "Investigating the performance of the private equity sector in the GCC" presented at World Conference on Management, Business and Finance (WORLDMBF), Dubai, UAE, 2023. -Paper title: "Examining macroeconomic factors and environmental sustainability: An OLS regression analysis of the impact of exports, imports, governmental budget, and oil products on CO₂ emissions in Jordan" presented at Natural Resources Economics and Energy Transition in the MENA Region (NREET), West Mishref, Kuwait, 2023. -Paper title: "Evaluating Kuwait's EV lag: In-depth analysis of owner experiences, dealer perspectives, and policy recommendations with local data insights" presented at Future of Sustainable Transport (AUCOB Conference), West Mishref, Kuwait, 2023.

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- Paper Title: Engineering College and Business College: Rivalry or Cooperation? A Proposed Entrepreneurship Integration Model, at the 2nd International Conference on Global Entrepreneurship Summit 2023, Montreal, Canada, October 2023 (ScitechSeries)

 - Paper Title: Deploying Method of Moments Quantile Regression to Explore the Moderating Role of Information and Communication Technology in Financial Inclusion-Environmental Deterioration Nexus, at the IV International Applied Statistics Conference, September 2023, Sarajevo, Bosnia and Herzegovina. (UYIK 2023)

 - Paper Title: Mathematical modeling for exploring spread of cyberattacks through IoT devices, at the International Conference on Science, Engineering Management and Information Technology (SEMIT 2023), Ankara, Turkey, September, 2023

 - Paper Title: An Explanation of Artificial Intelligence and Real-Life Applications:
A Basic Mathematics Perspective, at the 2ND INTERNATIONAL MEET ON APPLIED SCIENCE, ENGINEERING AND TECHNOLOGY, August 2023, Vancouver, Canada (ASETMEET 2023)

 - Paper Title: WHAT KIND OF MATHEMATICS SHOULD 'ENGINEERING MATHEMATICS' BE? MATHEMATICIANS' POINT OF VIEW, at the 17th International Technology, Education and Development Conference, Valencia, Spain, March 2023 (INTED 2023).

 - Paper Title: Variational Basis for Finite Element Model of Coupled Differential Equations - Functionspace Interpretation, at the International Conference on Fractional Differentiation and its Applications (ICFDA 2023), Ajman, UAE, March 14-16, 2023

 - Paper Title: Examining Macroeconomic Factors and Environmental Sustainability: An OLS Regression Analysis of the Impact of Exports, Imports, Governmental Budget, and Oil Products on CO2 Emissions in Jordan , at the Natural Resources Economics and Energy Transition in the MENA Region: Challenges, Strategies and Lessons Learned, 1st NREET Conference - Kuwait March 15-16, 2023

 - Paper Title: Financial Inclusion and Bank Stability - Comparative Evidence between Islamic and non-Islamic banks, at the 23rd Malaysian Finance Association International Conference, August 2021 (MFAIC 2021).
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	Paper title: “Impact of Covid-19 Pandemic on Stability and Resilience of Islamic Banks in Kuwait: Statistical Evidence and Mathematical Modeling” at SASE’s 33rd annual conference, After Covid? Critical Conjectures and Contingent Pathways of Contemporary Capitalism, which will be held virtually – July 2-5, 2021. Paper title: Mathematical Modeling of New Marsh Funnel Designs for Measuring Viscosity of Nanofluids presented at the Arab International Conference on Nanotechnology, AIC Nano 1-3, March 2021 hosted by KISR (Kuwait Institute for Scientific Research). Paper title: Rethinking Quantitative Skills in a Data-Driven Society: A View from the Middle East, at IEEE Global Engineering Education Conference (EDUCON), April, 2020, Porto, Portugal. (virtual/online) Paper title: Mathematical Modeling of the Marsh Funnel for Measuring Rheological Properties of Drilling Nanofluids for Energy Efficient Environment, presented at the Ecologic Vehicles & Renewable Energies (EVER) International Conference, April 8, 2016, Monaco, France. Paper title: Applying PBL in Differential Calculus, presented at the International PBL Symposium, March 13, 2016, Kuwait. Paper title: Validation of Directional Drilling Well Design Trajectory with a Case Study in Kuwait, presented at the International Conference on Sustainable Mobility Applications, Renewables and Technology (SMART), November 23-25, 2015, Kuwait. Paper title: Towards a New Home Financing Model: A Shariah Compliant Perspective, presented at the Kuala Lumpur International Business and Social Science Research Conference (KLBSRC), August 7-8, 2015, Malaysia. Paper title: A Fuzzy Logic Technique to Measure Client Risk in Islamic Banks: Theoretical Framework, presented at the Gulf International Conference on Applied Mathematics held at Gulf University for Sciences and Technology, November 19-21, 2013, Kuwait.
College Service including committee Membership:	- Departmental Student Appeal and Complaint Committee, Quality Management Committee, Curriculum Committee, Credit Transfer Committee, Teaching, Learning, Validation, Moderation Committee, Research and Faculty Development Committee, Appointment and Promotion Committee, Disciplinary Committee, Mathematics and Physics Council

	- Departmental Representative - Engineers Australia Accreditation visit - College of Engineering Internship Program Faculty Supervisor - Student Affairs Mathematics & Physics Tutoring Center - College-level Activities and Achievements committee
National Service:	- Taking part in research projects that aim at national priorities in terms of academic research
College Committees:	- Activities and Achievements Committee - Accreditation Committee - Engineers Australia visit