

Anwr M. Albaghdadi

Lecturer, Mechanical Engineering

Department of Engineering and Technology

University of Wisconsin–Stout

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Professional Summary

Mechanical Engineering educator and Chartered Engineer with over eleven years of industrial experience in the oil and gas sector and university teaching experience in undergraduate mechanical engineering education. Experienced in engineering design, senior capstone projects, laboratory instruction, computational modeling, and project-based learning. Committed to preparing industry-ready engineers by integrating engineering fundamentals with real-world practice while fostering teamwork, innovation, professional communication, and lifelong learning. Research interests include dynamic systems, reliability engineering, thermal-fluid sciences, predictive maintenance, and computational intelligence for mechanical engineering applications.

Education

Ph.D. in Mechanical Engineering | Universiti Teknologi Petronas, Malaysia | March 2023

Dissertation

A Novel Balanced Double Crank Rocker Mechanism for Vibration Suppression

M.Sc. in Mechanical Power Engineering | Cairo University, Egypt | November 2016

Thesis

An Artificial Neural Network Model for Gas Turbines Performance Prediction

B.Sc. in Mechanical Engineering | Sana'a University, Yemen | June 2006

Final Year Project

Fluid Power Systems: Approach, Analysis and Control

Academic Appointments

Lecturer

University of Wisconsin–Stout | August 2024–Present

Teach undergraduate mechanical engineering courses in Statics, Dynamics, System Dynamics, Numerical Methods, Thermodynamics, Heat Transfer, and Senior Design while mentoring student design teams and supporting project-based engineering education.

Responsibilities include:

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- Develop and deliver undergraduate mechanical engineering courses using lectures, laboratory instruction, simulations, and project-based learning.
 - Develop a fully asynchronous System Dynamics course incorporating MATLAB simulations, virtual laboratory activities, and AI-assisted instructional resources.
 - Improve Thermodynamics and Heat Transfer laboratory activities to strengthen conceptual understanding and hands-on learning.
 - Mentor multidisciplinary senior design teams through project planning, design reviews, technical presentations, documentation, and prototype development.
 - Develop instructional materials, laboratory exercises, and assessments to support student learning.
 - Participate in continuous course improvement through assessment, curriculum development, and refinement of instructional materials and laboratory activities.
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Graduate Assistant

Universiti Teknologi Petronas, Malaysia | May 2019 – March 2023

- Assisted instruction in Mechanics of Machines, Fluid Dynamics, Thermodynamics, and Electrical Power & Machines.
 - Conducted laboratory demonstrations and supervised undergraduate laboratory sessions.
 - Developed MATLAB/Simulink-based virtual laboratory exercises.
 - Assisted with grading, examinations, and student academic support.
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Industrial Experience

Senior Mechanical Engineer

Petromasila E&P, Yemen | January 2016 – December 2018

- Led maintenance and reliability activities for mechanical systems supporting oil and gas production facilities.
- Planned and supervised maintenance work for rotating and static equipment.
- Implemented predictive maintenance practices using vibration analysis and condition monitoring.
- Supported equipment installation, commissioning, contractor supervision, and engineering design review.
- Conducted failure investigations and root cause analyses to improve equipment reliability.

Mechanical Engineer

TOTAL Energies E&P Yemen | November 2007–December 2015

- Performed maintenance, inspection, and troubleshooting of mechanical equipment used in oil and gas production facilities.
- Supported preventive maintenance planning and equipment reliability improvement initiatives.

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- Participated in equipment modification projects and technical investigations.
- Prepared engineering reports and maintenance documentation.

Mechanical Engineering Consultant

Freelance | April 2023–August 2024

Provided engineering consulting, technical writing, and tutoring services in mechanical engineering and engineering analysis.

Peer-Reviewed Publications

1. Albaghdadi, A.M., Baharom, M., & Sulaiman, S. (2024). *Performance Prediction of a Power Generation Gas Turbine Using an Optimized Artificial Neural Network Model*. AIUB Journal of Science and Engineering.
2. Albaghdadi, A.M., Baharom, M., & Sulaiman, S. (2022). *Hybrid methodology using balancing optimization and vibration analysis to suppress vibrations in a double crank-rocker engine*. Eksploatacja i Niezawodnosc.
3. Albaghdadi, A.M., Baharom, M.B., & Sulaiman, S.A. (2021). *Tri-planar balancing optimization of a double crank-rocker mechanism for shaking forces and shaking moments reduction*. Proceedings of the Estonian Academy of Sciences.
4. Albaghdadi, A.M., Baharom, M.B., & Sulaiman, S.A. (2021). *Balancing and Simulation of a Double Crank-Rocker Engine Model for Optimum Reduction of Shaking Forces and Shaking Moments*. Mathematical Modelling of Engineering Problems.
5. Albaghdadi, A.M., Baharom, M.B., & Sulaiman, S.A. (2021). *Parameter Design Optimization of the Crank-Rocker Engine Using the FMINCON Function in MATLAB*. IOP Conference Series: Materials Science and Engineering.
6. Albaghdadi, A. M., Baharom, M. B., & Sulaiman, S. A. (2021). *A Comparative Study and Validation of Kinematic Analysis of a Crank-Rocker Engine Prototype Using MATLAB and ADAMS*. In International Conference on Artificial Intelligence for Smart Community, *Lecture Notes in Electrical Engineering* (Vol. 758, pp. 125–133). Springer.

Conference Presentations

- International Conference on Artificial Intelligence for Smart Community.
- Virtual Conference on Engineering & Technology (ViCET 2020).

Professional Service

- Reviewer, *American Journal of Science, Engineering and Technology*.
- Member, Mechanical Engineering Program Advisory Committee, University of Wisconsin–Stout.

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Professional Development

Selected professional development includes:

- Manufacturing Processes
- SOLIDWORKS Essential Training
- Transparency in Learning and Teaching (TILT)
- Accessibility in Higher Education
- Gas Engine Technology
- ISO 14001 Environmental Management Systems
- PLC Ladder Logic
- ASME GD&T Drawing Interpretation
- CITI Program
- Laser Shaft Alignment
- ISO Vibration Analyst CAT I

Professional Memberships

- Chartered Engineer (CEng), Institution of Mechanical Engineers (IMechE)
- Member, American Society of Mechanical Engineers (ASME)

Technical Expertise

Mechanical Engineering: Engineering Design • Mechanical Design • Product Development • Dynamic Systems • Vibrations • Thermal-Fluid Sciences • Reliability Engineering • Predictive Maintenance

Modeling & Simulation: MATLAB • Simulink • MSC Adams

CAD & Engineering Software: AutoCAD Inventor • CATIA V5 • SOLIDWORKS

Languages: Arabic (Native) • English (Fluent) • French (Basic)