



# JAFAR MASRI

Assistant Professor of Automotive Engineering

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## PROFESSIONAL SUMMARY

Experienced educator and researcher in automotive engineering, with expertise in vehicle dynamics and stability, aerodynamics, porpoising mitigation, and drag reduction. Specializing in computational modeling, CFD simulations, and performance optimization, with a strong focus on improving vehicle efficiency and handling. Passionate about advancing automotive technology through research, teaching, and collaboration, while mentoring the next generation of engineers. Committed to integrating innovative engineering solutions into both academic and industry applications to drive progress in vehicle design and performance.

## EXPERIENCE

### Assistant Professor

#### Palestine Technical University - Kadoorie | July 2020 - Current

- Proactively implemented curriculum across all subject areas, effectively organizing classroom and learning resources to enhance student engagement and academic performance.
- Teaching a minimum of 4 subjects a semester such as: "Automotive Systems", "Automotive Systems Lab", "Vehicle Dynamics and Vibration", "Automotive Electrical and Electronic Systems", "Automotive Applications of Computational Fluid Dynamics", "Automotive Workshop 1", "Automotive HVAC Systems", "Especial Topics in Automotive Engineering", "Introduction to Automotive Engineering" and "Automotive Control and Measurements".
- Demonstrated excellence in research mentorship and departmental contributions by expanding automotive engineering projects, particularly in vehicle aerodynamics, design optimization, and energy efficiency, leading to a 30% increase in CFD-related research.
- Achieved a 97% performance score in 2022, the highest in the College of Engineering and Technology, recognizing exceptional contributions to education and research.

### Head of Automotive Engineering Department

#### Palestine Technical University - Kadoorie | October 2021 - Current

- Monitor and assess program outcomes and student learning to ensure continuous improvement and alignment with institutional goals.
- Established and equipped four state-of-the-art laboratories in the Automotive Engineering Department, enhancing hands-on learning and research capabilities. These labs include Electrical and Electronic Systems, Powertrain and Drivetrain, Vehicle Diagnostics, and workshop, providing students with practical experience in automotive technologies.
- Led and executed multiple projects, including an Erasmus+ application focused on Electric and Hybrid Electric Vehicles, while establishing partnerships with automotive industry stakeholders and EU Institutions to facilitate collaborative training opportunities.
- Developed, reviewed, and updated academic programs and courses, ensuring their alignment with industry standards and accreditation requirements, including the curriculum for Automotive Engineering programs (Diploma and B.Sc.) at PTUK.

- Member of the Cooperative Education Committee at PTUK, responsible for strengthening collaborations between academia and local industry. This role involves developing industry partnerships, facilitating student internships, coordinating cooperative training programs, and ensuring that academic curricula align with industry needs.

### **Head of Mechanical Engineering Department**

#### **Palestine Technical University - Kadoorie | October 2023 – Current**

- Spearheaded departmental growth and strategic planning, enhancing academic programs, research initiatives, and industry collaborations to strengthen the department's impact.
- Monitored and supervised 13 academic staff members, ensuring high teaching standards, research productivity, and curriculum alignment with industry needs, while also providing mentorship and professional development opportunities to foster a collaborative and research-driven academic environment.

### **Tutor**

#### **Northumbria University | January 2018 – May 2020**

- Taught Mechanical and Structural Systems II (Dynamics) and Engineering Analytics to second-year engineering students, organized effective tutoring sessions in Mathematics and CFD for undergraduate and graduate students,

### **PhD Research Associate**

#### **Northumbria University | October 2017 – September 2020**

- Conducted research on ground effect vehicles (GEVs), developing a novel mathematical model to predict nonlinear structural response, dynamic stability, and aero-hydrodynamic loads, validated through CFD simulations.
- Led high-fidelity CFD simulations and numerical modeling, optimizing GEV performance, takeoff efficiency, and drag reduction strategies.

### **Lecturer**

#### **Palestine Technical University - Kadoorie | January 2017 – September 2017**

- Consistently received positive feedback, achieving an average course evaluation rating of 4.6/5, while increasing student engagement by 30% through optimized lab procedures.

### **Assistant Technical Manager**

#### **Ritz Motors / Jaguar Land Rover Dealership | February 2016 – January 2017**

- Led diagnostic and technical support operations, ensuring efficient troubleshooting, maintenance, and repair of Jaguar Land Rover vehicles while upholding manufacturer standards.
- Managed workshop operations and team training, enhancing service efficiency, customer satisfaction, and adherence to automotive best practices.

### **Vehicle Diagnostics Engineer**

#### **United Motors Trade / VW Group Dealership | April 2014 – July 2014**

- Conducted advanced diagnostics and fault analysis for Volkswagen Group vehicles, ensuring precise troubleshooting and efficient repairs in compliance with manufacturer standards.

EDUCATION	September 2020	Ph.D. - Mechanical Engineering Northumbria University, United Kingdom
	October 2015	M.Sc. - Automotive Engineering City, University of London, United Kingdom
	December 2013	B.Sc. - Mechanical Engineering An-Najah National University, Palestine
KEY PUBLICATIONS	<ul style="list-style-type: none"><li>• <b>Masri, J.</b>, Amer, M., Salman, S., Ismail, M., &amp; Elsisi, M. (2024). <i>A survey of modern vehicle noise, vibration, and harshness: A state-of-the-art</i>. Ain Shams Engineering Journal, 15(10), 102957. <a href="https://doi.org/10.1016/j.asej.2024.102957">https://doi.org/10.1016/j.asej.2024.102957</a></li><li>• Amer, M., <b>Masri, J.</b>, Dababat, A., Hamid, K., &amp; Sajjad, U. (2024). <i>Electric vehicles: Battery technologies, charging standards, AI communications, challenges, and future directions</i>. Energy Conversion and Management: X, 100751. <a href="https://doi.org/10.1016/j.ecmx.2024.100751">https://doi.org/10.1016/j.ecmx.2024.100751</a></li><li>• <b>Masri, J.</b>, Dala, L., &amp; Huard, B. (2024). <i>Nonlinear Dynamic Stability Analysis of Ground Effect Vehicles in Waves Using Poincaré–Lindstedt Perturbation Method</i>. Journal of Marine Science and Engineering, 12(12), 2154. <a href="https://doi.org/10.3390/jmse12122154">https://doi.org/10.3390/jmse12122154</a></li></ul>	
AWARDS	<ul style="list-style-type: none"><li>• 2017: Northumbria University Faculty Funded Researcher Development Framework (RDF): Academic excellence fully funded PhD studentship worth almost £85000.</li><li>• 2021: Palestine Technical University – Kadoorie Distinguished Research Award for the paper published in the Journal of Thermal Science and Engineering Progress (Q1 top 10%).</li></ul>	
KEY SKILLS	<ul style="list-style-type: none"><li>• Computational Fluid Dynamics (CFD)</li><li>• Computer-aided design (CAD)</li><li>• Engineering mathematics</li><li>• Flow control</li><li>• Fluid mechanics</li><li>• MATLAB</li><li>• Nonlinear dynamics</li><li>• Student assessment and monitoring</li><li>• Supervisory skills</li><li>• Vehicle fault detection</li><li>• Vehicle performance prediction and optimisation</li><li>• Vehicle system analysis</li></ul>	
KEY PROJECTS	<ul style="list-style-type: none"><li>• <a href="#">3EEE</a>: I am involved in this Erasmus+ CBHE Project, enhancing teaching and learning through professional development for academics and technicians at Palestinian universities. I developed assessment tools, introduced problem-based learning, and integrated AI-driven interactive lessons, resulting in improved student performance, satisfaction, and engagement. Additionally, as course coordinator and subject matter expert for <i>Automotive Electrical and Electronic Systems</i>, I implemented a flipped classroom approach, significantly enhancing student learning experiences. As part of the 3EE project, I attended a training course at Técnico Lisboa, Portugal, in July 2024, further strengthening my expertise in innovative teaching methodologies.</li></ul>	