



Navid Aryan

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PROFILE SUMMARY

Profile Summary

PhD candidate in Mechanical Engineering at Sapienza University and the Institute of Marine Engineering (CNR-INM), Rome, with over three years of research experience in wind turbine modeling, validation, and experimental aerodynamics. Specialized in aeroelastic and hydrodynamic simulations using Modelica, Python, and MATLAB. Developed the AEOLIAN platform for onshore and offshore HAWTs and recently completed an experimental campaign on VAWTs using time-resolved PIV. Published in international conferences (TORQUE, WESC) and peer-reviewed journals, and active contributor to IEA Wind Task 47. I have just finished my PhD but still have not received the title.

WORK EXPERIENCE

 **INSTITUTE OF MARINE ENGINEERING- ITALIAN RESEARCH COUNCIL – ROMA, ITALY**
MECHANICAL RESEARCH ENGINEER – 20/04/2021 – 20/04/2022

EDUCATION AND TRAINING

01/06/2022 – 01/06/2025 Roma, Italy
PHD MECHANICAL ENGINEERING Sapienza University of Rome

Website <https://www.dima.uniroma1.it/dima/> | Level in EQF EQF level 8

01/10/2017 – 25/01/2021 Roma, Italy
MASTER OF SCIENCE, MECHANICAL ENGINEERING Sapienza University of Rome

Website <https://www.dima.uniroma1.it/dima/> | Level in EQF EQF level 7

01/10/2006 – 02/02/2012 Booshehr, Iran
BACHELOR DEGREE, MECHANICAL ENGINEERING IN HEAT AND FLUIDS Khaliye-fars-University

Level in EQF EQF level 6

LANGUAGE SKILLS

Mother tongue(s): **PERSIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
ITALIAN	B1	A2	B1	B1	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

MATLAB | Python (computer programming)

PUBLICATIONS

2024
[The Beddoes-Leishman dynamic stall model: critical aspects in implementation and calibration](#)

Despite the importance of an accurate modelling of dynamic stall for a proper aeroelastic design of the rotor and the definition of its operational boundaries, consensus on a single formulation able to combine versatility and robustness has not been reached yet.

Authors: Pier Francesco Melani, Navid Aryan, Luca Greco, Alessandro Bianchini | **Journal Name:** Renewable & Sustainable Energy Reviews 2024

2023

[Assessment of a fast and versatile aeroelastic platform for on/offshore wind turbine analysis.](#)

To effectively calculate the dynamic response of wind turbine rotors, the present paper proposes fast and reliable, Fluid-Structure Interaction (FSI) tool AEOLIAN (AErOeLastic simuLatioN) able to handle complex geometries within the framework of MATLAB Simulink/Simscape-Multibody®.

Authors: Navid Aryan, Luca Greco, Claudio Testa | **Journal Name:** OSES Conference Proceedings, 2023

2024

[Effect of Induction and Blade Elasticity Modelling on Wind Turbine Rotor Performance Predictions](#)

This study investigates the impact of blade induction modelling on the accuracy of wind turbine rotor aeroelastic predictions.

Authors: Navid Aryan, İldeniz Öztürk, Muhammad Juanda Putra, Nilay Sezer-Uzol, Elif Oğuz, Luca Greco | **Journal Name:** TORQUE 2024 | **Publisher:** IOP, Journal of Physics

2024

[Accuracy assessment of Beddoes-Leishman and IAG dynamic stall models for wind turbine applications](#)

The study presents a systematic comparison between two of the most-credited dynamic stall models for wind turbine applications: the original Beddoes-Leishman (BL) model and the newly-developed IAG.

Authors: Omar Sherif Mohamed, Pier Francesco Melani, Galih Bangga, Navid Aryan, Luca Greco, Alessandro Bianchini | **Journal Name:** TORQUE 2024 | **Publisher:** IOP, Journal of Physics

2024

[Aerodynamic Characterization of the IEA 15 MW Reference Wind Turbine by Code-to-Code Comparison](#)

The consistency of different aerodynamic formulations applied to the analysis of a modern multi-megawatt horizontal axis wind turbine rotor is investigated.

Authors: Lorenzo Tieghi, Vincenzo Morici, Alessio Castorrini, Navid Aryan, Luca Greco | **Journal Name:** TORQUE 2024 | **Publisher:** IOP, Journal of Physics

PROJECTS

01/06/2022 – CURRENT

International Energy Association (IEA) Wind Task 47

TURBINIA: TURBulent INflow Innovative Aerodynamics. This task, initiated in 2021 under the International Energy Agency (IEA) Wind Technology Collaboration Programme (Wind TCP), aims to enhance collaboration in conducting detailed aerodynamic measurements on megawatt-scale wind turbines.

HONOURS AND AWARDS

PhD Scholarship 2024 – European Academy of Wind Energy (EAWE)

Experimental and Numerical Activity on Vertical-Axis Turbine.

Avvio alla Ricerca 2024 – Sapienza University of Rome

VENTURE: Vertical Experimental Numerical Turbine Research and Evaluation