Oscar Bucca

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EXPERIENCE

PhD Researcher **Nov 2024 - Present**

La Sapienza Università di Roma

- Development of algorithms and computational tools for the reduction of chemical kinetics models reduction and optimization of complex kinetic mechanisms for combustion

Product Support Engineer - AW109 Technical Publication Focal Point **Jan 2024 - Nov 2024**

LEONARDO S.p.A.-Sesto Calende, Varese, Italy

- Responsible for the management, planning, development, control and improvement of maintenance technical publications for the AW109/119 helicopter fleet.
- Project Manager and focal point for the publication of Structural Repair, Aircraft Corrosion Control and Common Standard Practices publication for the AW109/119/139/169/189 helicopter fleet.
- Responsible for providing support and technical interface to customers and other parts of the company in relation to publications.
- Management of the logistic database of helicopter parts and construction for continuous airworthiness.

Product Support Engineer - Integrated Logistic Support Engineering Specialist **Apr 2023 - Dec 2023**

LEONARDO S.p.A.-Sesto Calende, Varese, Italy

- Analysis of technical documentation for the production of technical documentation to be supplied to customers
- The main activities include the evaluation of helicopter modification requests and continuing airworthiness instructions from customers, in-service events and specific technical areas, and performing the design requirements analysis leading to the preliminary design definition.

EDUCATION

PhD Candidate **Nov 2024 - Present**

La Sapienza Università di Roma

- PhD Program: ”Development of advanced models for green energy carriers: reduction and optimization of complex kinetic mechanisms”

Master of Science in Aeronautical Engineering **Jan 2021 - May 2023**

La Sapienza Università di Roma

- Thesis entitled ”Computational Singular Perturbation Analysis of Premixed Ammonia/Hydrogen/Air flames”. A CFD model for the combustion of a premixed flame was developed in Python using the Cantera library. The results of the model, validated with experimental data, were then post-processed through Computational Singular Perturbation Analysis to identify the main chemical-physical contributions to the phenomenon of the different elements of the system.
- The curriculum studiorum focuses on aeronautical design in its various aspects. The disciplines of study include gas dynamics, flight mechanics of fixed and rotary wing aircraft, structural and aeroelastic analysis, vibration and noise control, and the study of aircraft engines with emphasis on turbomachinery, combustors and combustion processes.

Bachelor of Science in Aerospace Engineering **Sep 2017 - Dec 2020**

La Sapienza Università di Roma

- Thesis: ”Use of neural networks for numerical modelling of combustion”.
  Using the Modefrontier software and the subsequent re-elaboration of the data using the Matlab software, I carried out the training of a neural network of a flamelet system, searching for the optimal solution in terms of computational costs and model accuracy.

Certifications and Skills

- Certifications: Pegasus Excellence Certificate
- Technical Skills: Python, Cantera Library, Matlab, Simulink, ModeFrontier, Wolfram Mathematica, Nastran, Patran, Latex, Office
- Language Skills: English (Advanced), Italian (Native)
- Strengths:Transparent communication, Group work, Flexibility, Critical thinking, Passion,Problem Solving,Dedication