ANDRÉ BALBI AGUIAR

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OBJECTIVE

Seeking a data science position to leverage my 10+ years of engineering experience and expertise in data analysis. Transitioning from engineering to data science, I aim to apply my analytical skills and expertise in managing complex data sets. Committed to contributing insights and solutions to a dynamic team, I'm excited to use my technical proficiency for impactful outcomes.

EDUCATION

Bachelor in Data Science, UNIVESP — Expected 2025
Bachelor in Aeronautical Engineering, UNITAU — 2005 - 2010
Data Processing Technician, IDESA — 2001 - 2003

LANGUAGES

English Advanced
Portuguese Native

SKILLS

Hard Skills Python—ML—Statistics and Probability—Data Manipulation and Analysis—Data Vis
Soft Skills Learning Mindset—Problem-Solving—Teamwork and Collaboration—Adaptability and Flexibility

EXPERIENCE

Information Technology Analyst — Test Engineer — May 2012 - Apr 2023
INPE (Instituto Nacional de Pesquisas Espaciais) — *São José dos Campos - SP -Brazil*

- I spearheaded the creation of routines to analyze and visualize extensive sensor data, encompassing accelerometers, strain gauges, and pressure sensors (microphones). Leveraging my data analysis and machine learning skills, I developed efficient Python algorithms and pipelines for precise and rapid data interpretation. These routines significantly enhanced the analysis process, providing valuable insights for dynamic tests and improving the quality of technical reports.
- Performance in the area of Dynamic Tests (Vibration, Shock and Vibro-Acoustic).
- Experience regarding the execution of dynamic tests:
  - First contact with the client, evaluating the need for the same and proposing, if applicable, the best way/method to perform the test;
  - Assessment of available resources and most appropriate procedures for each type of test requested; - Design and evaluation of the test setup;
  - Instrumentation and testing;
  - Analysis of results and preparation of technical reports.
- Experience in measuring the sound power emitted by machines and equipment in general, according to industrial standards and international codes.
- Responsible for the preparation, execution and analysis of the results of vibro-acoustic tests of the Brazilian Space Program.
- Technical auditor responsible for surveying and analyzing internal procedures and implementing corrective actions and/or improvements in accordance with ISO/IEC 17025 (General requirements for the competence of testing and calibration laboratories).

Business Owner (not active) Jan 2009 - Jan 2012
Pharo's *Pindamonhangaba - SP - Brazil*

- Responsible for the elaboration and execution of acoustic projects in environments making necessary measurements and proposing solutions.
- Experience in insulation and/or acoustic conditioning for noise control and leakage.

Intern — Scientific initiation Jan 2007 - Jan 2009
IAE (Instituto de Aeronáutica e Espaço) *São José dos Campos - SP - Brazil*

- Numerical modeling of aeronautical structures via finite element software (FEMAP, NASTRAN/PATRAN).
- Numerical modeling of aeroelastic surfaces made of composites.
- Experimental tests of aerodynamic surfaces in wind tunnels to validate numerical models.
- Elaboration of routines in Matlab for analysis, processing and presentation of results.

EXTRACURRICULAR COURSE

Data Science Intensive Course , Digital House 2021
Machine Learning and Statistical Analysis, WorldQuant University 2020
Scientific Computing and Python for Data Science , WorldQuant University 2019

PUBLICATIONS

MODELAGEM DE UMA ASA AEROELÁSTICA EXPERIMENTAL EM MATERIAL COMPOSTO In: CONEM 2010, Campina Grande - PB - Brazil.
VI CONGRESSO NACIONAL DE ENGENHARIA MECÂNICA. August 8th, 2010

Short Project Title: The feasibility of employing an experimental model of a flat plate constructed from composite material to explore the aeroelastic behavior of such structures is under investigation. Starting from the experimental modal analysis of the plate, progressing through the assembly of the numerical model via modal shape analysis utilizing the finite element method, and ultimately reaching the experimental aeroelastic analysis, the obtained results are compared with the numerically conducted aeroelastic analysis, which employed specialized engineering software. The influence of lamination type of the plate and material properties on the flutter speed of the structure will be examined. Experimental trials were conducted within a continuous, closed-loop, subsonic wind tunnel, operating at ambient pressure and temperature, featuring an open section and moderate turbulence. The outcomes derived from both numerical and experimental analyses have been deemed satisfactory, illustrating the alignment of the methodology with the employed models and intended objectives. A more comprehensive study, currently in the planning phase, will incorporate the utilization of smart materials for aeroelastic control of structures with non-isotropic properties

INVESTIGATION OF CONSTRUCTION PARAMETERS INFLUENCE IN AEROELASTIC MODAL EVOLUTION CURVE USING THE ROGER METHOD AND STRIP MODELS. In: COBEM 2009, Gramado - RS - Brazil.
20TH INTERNATIONAL CONGRESS OF MECHANICAL ENGINEERING. November 15 - 20th, 2009

Short Project Title: This work details a numerical modeling of external loads to be integrated on an aircraft wing. New stores added to aircraft changes its structure and aerodynamic characteristics, what modifies the aircraft aeroelastic behavior. In order to evaluate the influence of external loads on the aircraft structure, the pylon/store set is modeled, initially, as a multibody in free condition. An eigenvalue problem is solved in this condition estimating the natural frequencies and mode shapes. The model is updated using the correlation of dynamic parameters of this coupling extracted from results of an experimental modal analysis. All these procedures aim the application of representative models in fighter aircrafts modernization programs that include the utilization of new external loads.