ANDRÉ BALBI AGUIAR

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OBJECTIVE

As an engineer with more than 10 years of experience in the aerospace sector, I am in the process of transitioning my career and seeking my first role in data science. I possess expertise in managing large volumes of data and knowledge in data analysis and machine learning.

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*

- 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.

- Experience in the development of routines for analysis and visualization of large volumes of data, coming from sensors used in the tests, such as: accelerometers, extenders and pressure sensors (microphones).

- 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: É investigada a viabilidade da utilização de um modelo experimental de uma placa plana feita de material composto no estudo do comportamento aeroelástico deste tipo de estrutura. Partindo da análise modal experimental da mesma, passando pela montagem do modelo numérico, através da análise das formas modais aplicando-se o método dos elementos finitos, para finalmente chegar à análise aeroelástica experimental, comparando os resultados obtidos com a análise aeroelástica numérica também realizada, na qual foi utilizada softwares de engenharia especializados. Serão investigados a influencia do tipo de laminação da placa bem como as propriedades dos materiais na velocidade de flutter da estrutura. Os ensaios experimentais foram realizados em um túnel de vento subsônico, contínuo, de circuito fechado, com pressão e temperatura ambiente, seção aberta e turbulência média. Os resultados obtidos das análises numéricas e experimentais foram considerados satisfatórios, demonstrando uma adequação da metodologia aos modelos utilizados e aos fins desejados. Um estudo mais completo, em processo de planejamento, incluirá a utilização de materiais inteligentes no controle aeroelástico de estruturas com propriedades não isotrópicas.

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.