



JOÃO BADAN

-  27 years old
-  Italian and Brazilian national
-  jpbadan@gmail.com
-  +33 7 67 80 27 79
-  jpbadan.com

PRODUCT ENGINEER

EDUCATION

- 2012 - 2018 **UNIVERSIDADE FEDERAL DE UBERLÂNDIA** - Uberlândia, Brazil
Bachelor in Mechanical Engineering
- 2015 - 2017 **ISAE SUPMÉCA** - Paris, France
Master in Mechanical Design & Simulation

WORK EXPERIENCE

- Jan - 2021 **LIEBHERR AEROSPACE** via Capgemini - Toulouse, France
Aug - 2022 **Product Manager**
Part of the team responsible for the development of Air Conditioning Packs and Humidifiers for regional and business aircraft. Main accomplishments:
 - Managed the development of a supplemental avionics cooling system
 - Intervened on the architecture definition of a high performance avionics cooling system
 - Coordination of qualification and V&V activities for the Pack and Humidifier of a business jet
 - Redaction of interface control documents, system description notes, equipment and system specifications as well as other technical documentation
 - Coordination of system performance testing campaigns, validation of testing reports
 - Development of numerical tooling to automate data workflows
- 2019 - 2020 **CAPGEMINI ENGINEERING** - Toulouse, France
Product Engineer
Part of Capgemini's product and system management team. Worked mainly in aerospace with punctual interventions on other industries. Main accomplishments:
 - PLM support, qualification documentation for nacelle joints and fasteners at **Safran Nacelles**
 - Coordination of R&D activities for **Liebherr Aerospace**: Directly involved on the development of two innovative technologies for future air-conditioning packs
 - Helped organise workshops to clarify the scope of our internal team in the context of Capgemini, identify new opportunities and diversify our offerings
- 2018 - 2019 **KRAFT HEINZ** via Usimontec - Goiânia, Brazil
Product Designer/Business Developer
Usimontec is a machine shop providing Kraft Heinz maintenance team. I intervened on technical/comercial roles as the focal point of Usimontec's business in a newly opened Kraft Heinz industrial plant. Main accomplishments:
 - Design and comercial propositions of mechanical assemblies for industrial food packaging machines
 - Technical support over the installation and commissioning of new industrial production lines
 - System architecture design and comercial proposition of an autonomous lid placing machine
 - Helped grow Usimontec's business inside Kraft Heinz leading a team of 5 technicians and structuring an industrial valve repair service. Directly contributed to more than 150k€ in gross revenue

TECHNICAL SKILLS

- 10+ years of programming experience. Python, Matlab, C and Rust
- Practice with machine learning algorithms including Neural Nets
- Python data analysis frameworks such as Pandas and Matplotlib
- CAD, CAE, MBSE and PLM tools including Catia V5, ANSYS Mechanical, Dymola and SmartTeam

LANGUAGES

- Portuguese - Mother Language
- English - Bilingual, ToEIC: 980/990
- French - Bilingual
- Italian - Intermediate

INTERNSHIPS

2017 - 2017 **CNR ISTITUTO MOTORI** - Naples, Italy
R&D Intern

Internship on the NVH department of a public Italian automotive research centre. Main accomplishments:

- Execution of experiments to characterise acoustical and gas emissions data of combustion vehicles
- Used machine learning to implement an oil pump cavitation detector
- Developed a machine learning model to predict the acoustical behaviour inside a vehicle's cockpit. Results published on a 2018 SAE technical paper

2015 - 2016 **TECHNOPLANE** - Paris, France
Product Development Intern

Internship on a French startup building a VTOL hybrid propulsion passenger aircraft. Part of a technical studies international team. Main accomplishments:

- Proposition of different aircraft architectures, helped develop a completely parametric model that enabled us to quickly iterate and analyse different designs
- Feasibility study of a hybrid aircraft propulsion solution. Contacted suppliers in Europe and China
- Worked on the management of three international teams
- Project management and definition of a future activities roadmap

EXTRACURRICULAR ACTIVITIES

2013 - 2015 **TUCANO AERODESIGN** - Uberlândia, Brazil
Product Engineer

Tucano is an aircraft development team, designing, manufacturing and operating remote controlled aircraft for the Brazilian SAE AeroDesign competition, organised annually by EMBRAER. I intervened on structural design, software development and manufacturing of an electrical aircraft weighting 1kg (empty) capable of carrying 40 tennis balls. Main accomplishments:

- Worked on the development of an internal software tool to procedurally generate thousands of aircraft variations and find the optimal one via genetic algorithms
- Managed a team of 2 people doing structural pre-sizing and mechanical simulations
- Experimentally characterised the mechanical properties of our internal composite materials. With the aid of topological optimisation I reduced a composite landing gear weight by more than 30%
- We've won the second place in the 2014 edition of the competition (among 50 international teams)

HOBBIES

- Programming: Currently building a CPU raytracer engine written in Rust
- Photography: Architecture and landscapes
- Sports: Hiking, cycling and running
- Reading: Non-fiction, psychology, economics, philosophy and biographies