



# 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 an avionics cooling system from PDR to SoP
  - 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 mechanical interface control documents, system description notes, equipment and system specifications as well as other technical documentation
  - Coordination of system performance testing campaigns, validation performance and vibration 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, redaction of qualification documents of nacelle joints and fasteners for **Safran Nacelles**
  - Coordination of R&D activities for **Liebherr Aerospace**: Intervened directly on the development of two innovative products.
  - 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 an 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