

Jaime Bowen Varela

LinkedIn: <https://www.linkedin.com/in/jaimebw/>

Google Scholar: www.shorturl.at/eoHW2

EDUCATION

Worcester Polytechnic Institute

Worcester, MA

Master of Computer Science

December 2023

- Specialization in Artificial Intelligence and Deep Learning
- Current GPA: 3.4

Universidad Europea de Madrid

Madrid, Spain

Master of Science in Aerospace Engineering

April 2022

- Thesis: “Predictive maintenance in bearings using Machine Learning”

Universidad Politécnica de Madrid

Madrid, Spain

Bachelor of Science in Aerospace Engineering

September 2020

- Specialization: Navigation and Aerospace Systems
- Thesis: “Development of a Python tool for using Machine Learning techniques with ADS-B data from the OpenSky Network”

PROFESSIONAL EXPERIENCE

INTA (Spanish Aeronautics and Space Institute)

Madrid, Spain

Researcher on Theoretical and Computational Aerodynamics

January 2022 – July 2022

- Assisted with the GARTEUR Aerodynamics and ONEIRE AIRBUS teams
- Conducted research on the application of Machine Learning algorithms to optimize aerodynamic simulations of transonic flows over wings and aircraft bodies and its fusion with flight test data
 - Utilized Machine Learning and Deep Learning frameworks in Python, including Sklearn, Xgboost, and PyTorch
 - Implemented reduced order modeling for model optimization based on PODs/PCA and manifold learning based on ISOMAP
- Created dashboards and visualization frameworks using Matplotlib and Streamlit
- This work resulted in presentations at various conferences and one publication (to be published)

ALG Consultancy

Madrid, Spain

Business Analyst and Data Analyst

January 2021 – July 2021

- Assisted with the "Data4Safety" EASA program, using technical analysis and Big Data to improve aircraft operations safety
- Skilled in handling geospatial data and geospatial timeseries
- Utilized PySpark and Palantir technologies to analyze flight data and identify potential incidents
- Ensured the quality of data from multiple airlines and the European Union Aviation Safety Agency

Universidad Politécnica de Madrid

Madrid, Spain

Research Intern

February 2020- January 2021

- Assisted with the AISA project, implementing cutting-edge technologies in air traffic management using ADS-B data
 - Applied supervised and unsupervised algorithms to air traffic control
 - Utilized classification algorithms to detect conflicts in controlled airspace
 - Employed clustering algorithms to optimize conflict detection per airspace
- Experienced in working with multicultural teams located throughout Europe

TECHNICAL SKILLS

Programming languages: Advanced Python (ML, DL, aeronautics), MATLAB, C, C++ & Fortran

Other technologies: Open Foam, Linux/Unix, Mac Os, Git, AWS cloud, Power Bi, Palantir Foundry, MS Office, Latex, SQL, Google Cloud, PySpark, PyTorch, Keras/Tensorflow, Sklearn

Languages: Spanish (Native), English (Fluent), French (Intermediate) and German (Elementary)

CONFERENCES & PUBLICATIONS

IN-PROCEEDING CONFERENCES CONTRIBUTION

- Javier Pérez-Castán, Tomislav Radisic, Thomas Feuerle, **Jaime Bowen Varela**, L. Pérez -Sanz, L. Serrano-Mir (02.01.2022). "*Machine Learning classification techniques applied to static air traffic conflict detection*". IOP Conference Series: Materials Science and Engineering, International Conference on Innovation in Aviation & Space to the Satisfaction of the European Citizens

OTHER CONFERENCES

- R. Castellanos, **J. Bowen Varela**, A. Gorgues, E. Andrés (10.04.2022) "*An assessment of reduced-order and machine learning models for steady transonic flow prediction on wings*". ICAS 2022
- Rodrigo Castellanos, **Jaime Bowen Varela** et al., (06.19.2022). "*Nonlinear interpolation of steady transonic flows via manifold learning and neural networks*" 1st Spanish Fluids Mechanics Conference
- Alejandro Gorgues, Rodrigo Castellanos, **Jaime Bowen Varela**, and Esther Andrés. (06.05.2022) "*Tree based comparative prediction of steady transonic flows over a wing*". ECCOMAS 2022