



# ALEJANDRO GORGUES VALENCIANO

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## SKILLS

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**Languages:** Spanish (Native), English (B2)

**Programming:** Python, SQL, R, JavaScript

**Data Science :** Python env (Scipy, Numpy, Pandas, Matplotlib), Scikit-learn, PyTorch

**Geospatial tools:** Python env (Rasterio, Shapely, Geopandas), GDAL, CDO

**Version Control:** Git

**Monitoring:** Datadog

**Cloud and Containerization:** Docker, Azure

**Data Processing:** Hadoop, Spark

**Visualization:** PowerBI, Tableau

**Database:** SQLServer, PostgreSQL, MongoDB, Firebase

## WORK EXPERIENCE

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### Data Engineer

December 2023 – Current

Vexiza

León, Spain

- Design and implementation of Data Analysis and Machine Learning solutions in environments requiring geospatial and weather data.
- Design and deployment of services, requiring management of real-time products mainly from forecasting sources such as Eumetsat, ECMWF and NOAA.
- Design, development and integration of backend services, ensuring interoperability between systems through APIs and middleware.
- Development of I+D+i projects focused on technological innovation and process improvement in analysis and risk prevention on weather prediction and contamination environments.

### Doctoral Researcher

December 2021 – Novembre 2023

Instituto Nacional de Técnica Aeroespacial (INTA)

Torrejón de Ardoz, Spain

- Study and application of machine learning and reduced order models applied to aerodynamics in nonlinear environments.
- Collaboration in the development of the aerodynamic database (multi-precision) that will be used to train the models with experts in aeronautics.
- Validation of the implemented methods to study the level of accuracy obtained against real cases.

### Software developer

January 2020 – December 2021

Instituto Nacional de Técnica Aeroespacial (INTA-CAB, Astrobiology Center)

Torrejón de Ardoz, Spain

- Algorithm adaptation and processing tools, visualization and analysis of data, image and 3D infrared spectroscopy.
- Integration of calibrated data and advanced products into astronomic data bases and into astrophysics specialized software packages.
- Development of procedures and tools for data combination and joint analysis with large volumes of data.

### Administrator System

February 2019 – December 2019

Instituto Nacional de Técnica Aeroespacial (INTA-CAB, Astrobiology Center)

Torrejón de Ardoz, Spain

- Network, data base, and server administration.
- Network monitorization.
- User support.
- Linux system administration.

### Internship

Instituto Nacional de Técnica Aeroespacial (INTA)

March 2017 – May 2017

Torrejón de Ardoz, Spain

- Processing, analysis and presentation of data obtained in flight tests.
- Data base development for the flight test area.

## EDUCATION

**Master Degree** | *Business Intelligence and Data Science*

University of Alcalá de Henares

November 2019 – December 2020

Alcalá de Henares, Spain

**Master Degree** | *Development of Applications and Services for Mobile Devices*

Technical University of Madrid

September 2018 – June 2019

Madrid, Spain

**Computer Science Degree**

University of Alcalá de Henares

September 2012 – June 2017

Alcalá de Henares, Spain

## COMPLEMENTARY FORMATION

**Mathematics for Machine Learning and Data Science Specialization**

Coursera

January 2024

**IBM Data Engineering**

Coursera

November 2023

**Measurement uncertainty calculation**

Instituto Nacional de Técnica Aeroespacial (INTA)

November 2022

**Deep Learning Specialization**

Coursera

September 2022

**Hands on Machine Learning for Fluid Dynamics**

von Karman Institute

February 2022

**Scientific Advance Python**

Instituto Nacional de Técnica Aeroespacial (INTA)

November 2021

**Matlab Advanced**

Instituto Nacional de Técnica Aeroespacial (INTA)

November 2021

**SOMACHINE Machine Learning, Big Data, and Deep Learning in Astronomy**

Institute of Astrophysics of Andalusia

April 2021

## CONFERENCES AND PRESENTATIONS

A. Gorgues, R. Castellanos, J. Nieto-Centenero and Andrés E.

*Application of a deep neural network for  $C_p$  prediction on multiple wing geometries in a transonic regime*

EUCASS2023

July 2023

A. Gorgues, R. Castellanos, J. Bowen-Varela and Andrés E.

*A comparison of machine learning methods for pressure coefficient prediction of an aeronautical configuration*

ECCOMAS2022

June 2022

## CERTIFICATIONS

**English**

Cambridge English Level 1 Certificate in ESOL International (First)