



## Albert Queraltó, PhD

Data Scientist and  
Software Developer

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## About me

Data Scientist and Software Developer with a PhD in Materials Science and a background in Physics. Experience in Python, R and SQL for data analysis, visualization, machine learning, and hardware automation.

My goal is to use data to solve any challenge at hand.

## Technical skills

- Python, R, C++, Javascript, ReactJS.
- Flask, FastAPI and Streamlit.
- Linux, Git, Docker
- SQL, PostgreSQL, Pentaho Data Integration and Microsoft SQL Server
- Power BI, Tableau and Flourish
- Pandas, Numpy, Scipy, Matplotlib, Seaborn
- Scikit-learn, Pytorch and Tensorflow
- AWS Cloud Tools (Athena / Redshift databases and Databricks)

## Languages

- English C1 (CAE)
- German B2/C1
- Spanish Native
- Catalan Native

## Competences

- Team player
- Analytical skills
- Critical thinking
- Planning and organization
- Problem-solver
- Self-education

## Education

Bachelor's degree in Physics	Universitat Autònoma de Barcelona	2009
PhD in Materials Science	Universitat Autònoma de Barcelona	2015
Master's degree in Innovation and Project Management	Universitat Oberta de Catalunya	2020
Master's degree in Data Science	Universitat Oberta de Catalunya	2024

## Experience

Python Developer	Adasa Systems (El Prat de Llobregat, Spain)	June 2025 - Present
<ul style="list-style-type: none"><li>Implementation of backend functionality using a IoT platform (Thingsboard).</li><li>Integration of data using APIs and FTP services.</li><li>Integration of hydrology model results into an PostgreSQL Database for later visualization.</li><li>Use of a scheduler (custom and Apache Airflow) to execute commands at periodic time intervals.</li><li>Processing of meteorology files to extract raster images from rain and load them to geoserver.</li><li>Process ensemble geographical data and loaded it into a PostGIS database for consumption via an API.</li></ul>		
Data Scientist	Adasa Systems (El Prat de Llobregat, Spain)	January 2023 - Present
<ul style="list-style-type: none"><li>Preprocessed time-series data for different purposes (null filling, outliers treatment, etc.).</li><li>Developed machine learning models on real-time acquired time-series data in water treatment plants and dams. Interpreted the predictions with the SHAP library.</li><li>Developed a real-time contamination events detector in water treatment plants with above 80% detection capabilities.</li><li>Created a user interface with Streamlit and FastAPI to create and edit configurations and models, migrate them between different treatment plants and dams, and visualize the results.</li><li>Developed a RAG agent to chat with documents and extract relevant information using ChromaDB, Langchain, Ollama, FastAPI and ReactJS.</li></ul>		
Data Scientist at HP	Between Technology S. L. (Sant Cugat del Vallès, Spain)	June 2022 - January 2023
<ul style="list-style-type: none"><li>Automation of database ETL processes with Python and Databricks.</li><li>Analysis of customer repairs and printing data from 3D plastic printers to identify the most common issues and determine root causes to implement product updates and increase availability.</li><li>Develop machine learning models to analyze the relationship between customer service KPIs, printing usage, and customer reviews.</li><li>Customer experience data platform managing, and automation of report generation with Python and PostgreSQL.</li></ul>		
Data Scientist	Institute of Materials Science of Barcelona (Cerdanyola del Vallès, Spain)	Jan. 2019 - June 2022
<ul style="list-style-type: none"><li>Lead researcher on high-throughput experimentation to develop and deploy cutting-edge, advanced experimental and data-driven approaches for fast material discovery.</li><li>Hardware automation for data acquisition with Python.</li><li>Project leader on machine learning for the optimization of inkjet printing deposition.</li><li>Data science and machine learning to develop models and predict experimental data.</li><li>Data analysis with Python, OriginLab and Excel.</li></ul>		
Data Analyst	Institute of Inorganic and Materials Chemistry (Cologne, Germany)	Oct. 2016 - Nov. 2018
<ul style="list-style-type: none"><li>Lead the development of four collaborative and competitive scientific projects for efficient hydrogen generation with sunlight, photodegradation of water contaminants, sensing of harmful gases and transformation of mechanical vibrations into electricity.</li><li>Numerical modelling with COMSOL Multiphysics.</li><li>Predictive analytics using advanced statistics.</li><li>Data analysis with OriginLab and Excel.</li></ul>		