## Personal Information / Contact


30 September 1978
Reus (Spain), Spanish
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## Technical Skills

UNIX-Schell | Python | R | Tcl-Tk | Matlab | SQL | Excel | Anaconda | Pandas | Scikit-learn | Statsmodels | Matplotlib | Seaborn | Plotly-Dash | Power BI | Tableau | Linux | Windows | Latex | GitHub | Kaggle | Azure

## Core Competencies

Creative Problem Solver
Team-Oriented Player
Motivated Self-Taught
Evolutionary Algorithms
Predictive Models
Statistical Analysis
Data Visualization
Presentation Skills

## Awards

2012-2016, **OPAC Marie Curie Fellow**

## Language Skills

*Catalan*: Native
*Spanish*: Native
*English*: Business Fluent
*French*: Proficient
textitGerman: Proficient (B1-Telc)

# Xavier Nuel Gavaldà

### Data Scientist & Physicist, PhD

Physicist with experience applying computer science techniques like Evolutionary Algorithms and abilities in statistical and predictive analytics. After my first experience in Business Analytics, I am looking for new challenges in the Data Science domain. Proven capacity to work in a variety of data situations and use programming and research to produce and interpret data-driven insights.

## Recent Work Experience

**06.2022 - 02.2023, VELUX, Hamburg (Germany)**
Business Analyst of the Sales Operation Team. Projects:

- **Data Quality Analysis**: Scrutinized, analyzed, and interpreted the company KPIs data quality metrics from SQL and SAP Business Warehouse databases using Power BI daily reports, Microsoft SQL Server Management Studio, and Python. Collaboration with Marketing team and direct communication with stakeholders.
- **Customers Stock Analysis**: Statistically analyzed and interpreted stock stored by customers using Power BI dashboards in order optimize the customer's stock. Implemented Data Mining techniques with Python to exploring data correlations between customers' stock and sales.
- **Customer Classification and Segmentation**: Scrutinized, analyzed and segmented customer multidimensional classification based on purchase behavior including RFM Model and K-Means clustering algorithm.

**02.2017 - 06.2020, Deutsches-Elektronen-Synchrotron (DESY), Hamburg (Germany)**
Postdoctoral researcher. Detailed achievements:

- Conducted PETRA IV storage ring lattice design, beam dynamics studies (ELEGANT, MADX), and optimization studies applying Genetic Algorithms (NSGA-II, MOPSO).
- Participated in the design, study and optimization of the PETRA IV beam dump scenario using Monte Carlo simulations (FLUKA and Geant4 codes).

## Personal Projects

04.2023, **Time Series Machine Learning Project**: *Sales Forecasting*

- Developed sales prediction using Exponential Smoothing, SARIMA, Linear Regression, Random Forest, XGBoost and Prophet algorithms. Obtained accuracy of 94.3%.

02.2022, **Chatbot Project**: *Rasa-X COVID-19 Chabot*
08.2021, **Natural Language Processing Project**: *NLP Disaster Tweets*

- Familiarized with text visualization, filtering Stop Words, encoding text data. Introduced with Term Frequency, Inverse Document Frequency, and Synthetic Minority Oversampling techniques. Upgraded and applied Hyperparameter Tunning (GridSearchCV), Ensemble (Bagging and Passing), K-fold Cross-Validation and Stacking techniques to improve the accuracy. Obtained accuracy of 98.3%.

07.2021, **End-to-end Machine Learning Classification Project**: *Diabetes Prediction*

- Developed classification model with Logistic Regression, Decision Tree, Random Forest, XGBoost, K-Nearest Neighbor, Support Vector Machines, Naive Bayes, and Linear Discriminant Analysis algorithms. Applied Hyperparameter Tunning (GridSearchCV), Ensemble (Bagging and Passing), K-fold Cross-Validation and Stacking techniques to improve the accuracy up to 90%.

06.2021, **End-to-end Machine Learning Regression Project**: *University Student Admission*

- Developed regression model using Linear, Lasso, Rigde and ElasticNet Regressions, Decision Tree, Random Forest, K-Nearest-Neighbor, and Support Vector Machines algorithms. Evaluated and compared accuracies with R2 and adjusted-R2. Obtained accuracy of 80.2%. Learnt and applied Regularization and Hyperparameter Tunning (GridSearchCV) techniques.

## Education

**12.2012 - 09.2016, University of Paris-Saclay, Paris (France)**
Ph.D. Thesis: *Muti-Objective Genetic based Algorithms and Experimental Beam Lifetime Studies for the Synchrotron SOLEIL Storage Ring (2016SACLS205)*. **Award**: **OPAC** Marie Curie fellow.

**09.2011 - 09.2012, Autonomous University of Barcelona, Cerdanyola del Vallès (Spain)**
Master of Synchrotron Radiation and Particle Accelerators.

**09.1997 - 06.2007, University of Barcelona, Barcelona (Spain)**
Degree in Physics.

## Certificates

**03.2022 - 04.2022, Microsoft Azure Data Scientist Assoc.-DP 100 Test Prep. Certif., Coursera**

**10.2021 - 01.2022, Google Data Analytics Certificate, Coursera**