

Hello! I am a mathematical engineer working in the data science industry with experience in various areas such as marketing, finance, and climate.

I have expertise in the entire data science workflow, from initial data extraction to making final decisions based on advanced models and optimization techniques. The variety of tools I utilize spans across a wide range, including Python, SQL, Dash, Excel, Pytorch and Docker, among others.

I am passionate about the world of data and being an active member of this large and expanding community. **Check out my webpage for an interactive experience:** <https://mrvgme.github.io>

## Professional Experience

### Climate Data Scientist at Arfima Financial Solutions (AFS)

June, 2023 - June, 2024

- Search for hazard and damage data to conduct a physical risk assessment. Compile a catalog using Google and Excel.
- Transform data sources from various map formats (such as tif, nc, ...) and geocoordinate systems to a standardized predefined format using Python.
- Onboard new data to S3 storage (Minio and AWS) using Python.
- Develop vulnerability models to evaluate physical risk for different types of assets and hazards based on research papers. Utilize Python and Probability.
- Implement physical risk assessment for assets in Spain using the Climada library with Python.
- Contribute to the OS-Climate hazard and physrisk GitHub repositories by forking them and submitting merge requests.
- Deploy the OS-Climate physrisk User Interface (UI) using mapbox and API, utilizing Python and React.
- Implement risk metrics for different hazards based on percentiles and central bank reports using Python.
- Develop dashboards for physrisk analysis using Grafana and SQL.
- Deploy the entire OS-Climate physrisk infrastructure and integrate custom code as required using Python.

### Financial Data Scientist at Arfima Trading

Sep, 2019 - Jun, 2023

- Collect data through public and private APIs as well as web scraping using Python.
- Parse and transform data in various formats (PDF, Excel, JSON, XML...) and update databases accordingly using Python.
- Develop pipelines to schedule database updates: downloading, transforming, inserting, logging, and reporting using Airflow and Python.
- Retrieve data from databases using SQL and Python.
- Visualize data using Matplotlib and Plotly in Python.
- Build interactive dashboards using Grafana and Dash in Python.
- Make numerical and categorical predictions using scikit-learn, Pytorch, Tensorflow, and pre-trained models in Python.

- Optimization based on model predictions and limited resources, enhancing decision-making utilizing Python and Mathematics.
- Create reports using Microsoft Power BI, Microsoft Excel, PowerPoint, and LaTeX.
- Build Docker images and deploy them.
- Migrate full data modelling cycle to Databricks.

## **Marketing Business Analyst Internship at Bankia**

Jan, 2019 - Jun, 2019

- A thorough understanding of the specific requirements and demands of the business.
- Data extraction and task scheduling using SQL and Hive.
- Propensity modeling to identify the ideal clients for a marketing campaign using scikit-learn and Python.
- Create reports with Microsoft Office Package.
- Monitoring and analyzing the performance of deployed models to enhance the modeling cycle through the utilization of Python and Excel.

## **Education**

### **Deep Learning Nanodegree at Udacity**

2021

This Nanodegree trains the learner about foundational topics in the exciting field of deep learning, the technology behind state-of-the-art artificial intelligence: convolutional neural networks (CNNs), recursive neural networks (RNNs), transformers and generative adversarial networks (GANs).

### **Machine Learning Engineer Nanodegree at Udacity**

2021

This Nanodegree focuses on the latest best practices and capabilities that are enabled by Amazon SageMaker, including new model design/deployment features and case studies in which they can be applied to, like computer vision and natural language processing, building machine learning workflows.

### **Mathematical Engineering Degree at Universidad Complutense de Madrid (UCM)**

2019

This university degree provides graduates with the ability to understand and develop a strong mathematical formalism applied to solve real-world problems, utilizing powerful tools such as probability theory, statistics, optimization, and programming.

### **Big And Open Data Summer Course at Universidad Complutense de Madrid (UCM)**

2017

The course provides with the principles of big and open data, as well as data processing techniques and real world examples explained by business experts.

## Skills

**Programming:** Python, SQL, R, Matlab, C++.

**Dashboards and Workflows:** Power BI, Dash, Grafana, Docker, Airflow.

**Cloud computing:** AWS S3 storage, AWS sagemaker, AWS lambda function, AWS endpoints and Databricks.

**Reporting:** Microsoft Excel, Power Point, Outlook and Power BI.

**Machine Learning:** Pytorch and Tensorflow.

**Big Data:** Pyspark and Databricks.

**Languages:** Native Spanish and fluent English.