

# Daniel SOLIS

## Data Scientist | Computational Physicist

Specialized in computational physics, I have experience in mathematical modeling, machine learning, deep learning, high performance computing and deployment of ML applications. I deliver innovative and simple solutions to complex problems.

## PROFESSIONAL EXPERIENCE

### TotalEnergies, Palaiseau, France

#### Trainee - Solar Photovoltaics

2024 - ongoing

- I am currently developing a machine learning model for the forecasting of solar irradiance in solar farms using data recollected from satellite images, sky imagers and irradiance historical data.

**Tech stack:** *Python, Pytorch, TensorFlow, Scikit-learn, OpenCV*

### Onepoint, Paris, France

#### Consultant data engineering/AI

2022

- Conducted an in-depth analysis and documentation of an internal database aimed at optimizing the recruitment process, resulting in an improvement in candidate selection.
- Mapped and analyzed a comprehensive database to develop a robust framework for estimating market size and market share across the Americas for a multinational corporation.

**Tech stack:** *Python, Excel*

### LEEL lab, CEA, Saclay, France

#### Research Engineer - Machine Learning

2020 - 2021

- Co-developed a ML python code for the prediction of chemical composition and thickness of mineral samples, obtaining accuracies between 2% and 10% depending on the quality of the simulated data.
- Developed a ML python code for the analysis of hyperspectral images and implemented algorithms for anomaly detection, reducing the analysis time by a factor of 20.
- Construction, training, testing, optimization and deployment of neural networks.

**Tech stack:** *Python, Bash, Keras, Scikit-learn, Scikit-image, MPI*

### SPINTEC lab, CEA, Grenoble, France

#### Physics researcher - Theory/Simulation of Spintronics

2016 - 2020

- Developed a model to predict spin transfer torque in a spintronic device.
- Conducted simulations in python of spintronic devices using a high performance computing machine.
- Performed analysis, interpretation and data visualisation of results using python.

**Tech stack:** *Python, Fortran, C, Bash, MPI, Scipy, matplotlib, seaborn*

### UNICAMP, Campinas, Brazil

#### Research assistant - Molecular dynamics

2015 - 2016

- Derived an equation to simulate the spiral shape of a carbon nanoscroll.
- Conducted molecular dynamics simulations of nanoscrolls using LAMMPS software on a high-performance computing machine.

**Tech stack:** *Bash, Matlab, LAMMPS*

## EDUCATION

### Specialized master in Data science

2023 - 2024

ENSAE - Institut Polytechnique de Paris, Palaiseau, France

### PhD. in Physics

2016 - 2020

Grenoble Alpes University and CEA, Grenoble, France

### MSc. in Physics

2013 - 2015

Campinas State University (UNICAMP), Campinas, Brazil

### BSc. in Physics

2007 - 2013

University of Valle (UNIVALLE), Cali, Colombia

🏠 Les Ulis, France

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## Key strengths

Mathematical modeling  
Deep learning  
MLOps  
Machine learning

## Languages

English ..... C1  
French ..... C1  
Spanish ..... Native  
Portuguese ..... C1

## Programming languages

Python ★★★★★  
C/C++ ★★★★★  
Bash ★★★★★  
Matlab ★★★★★

## Big data & machine learning

■ SQL ■ Spark  
■ Pytorch ■ Scikit-learn  
■ Kubernetes ■ Argo CD  
■ Docker ■ Mongo DB

## Miscellaneous technologies

■ Git ■ GPU  
■ OpenMP ■ MPI  
■ OS Linux ■ Tableau

## Certificates

**Data engineer bootcamp** 2022  
DataScientest - Mines ParisTech

**Google Professional Data Engineer** 2022

## Hobbies and interests

Robotics and aeromodelling  
Football  
Ski

## Find me online

🌐 LinkedIn/Daniel Solis, PhD

🐙 Github/danalejosolerma

🔍 GoogleScholar/Daniel Solis Lerma