

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

- Developed a pipeline to geolocate clouds in images and project cloud shadows onto the ground. Additionally, I created a metric to assess cloud's shadow projection reliability.
- I am currently developing a deep learning model for the prediction of cloud height by using images from a single camera and cloud height time series.

Tech stack: Python, Pytorch, Scikit-learn, OpenCV, MPI, AWS Cloud

Onepoint, Paris, France

Consultant data engineering/AI

2022 - 2023

- 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 visualization 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
Parallel computing

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