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

- Derived an equation to estimate the shadow created by clouds in the ground. In addition, I created resolution and error maps to assess its reliability.
- I am currently developing a deep learning model for the prediction of cloud height by using images from an All-Sky camera and cloud height time series.

Tech stack: *Python, Pytorch, 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

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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 ★★★★½
C/C++ ★★★★☆
Bash ★★★★☆
Matlab ★★★★☆

Big data & machine learning

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

Miscellaneous technologies

- Git
- OpenMP
- OS Linux
- GPU
- MPI
- 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
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