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Portfolio

ANDRÉS CAMILO ÁLVAREZ MONTOYA

WHO AM I?

Chemical Engineer and PhD in Chemical Engineering enthusiastic about programming and data science. Willing to assume new challenges as a Python developer in either data science or backed development. Have a great ability to apply new knowledge to other fields and a great adaptability to new jobs environments. My key strength is to learn quickly and auto didactically by watching videos or reading books.

Skills

- **Python**
- **Django**
- **Numpy**
- **Pandas**
- **Matplotlib**
- **Scipy**
- **Git/GitHub**
- **HTML**
- **CSS**
- **JavaScript**
- **AWS**
- **Heroku**
- **Matlab**
- **SQL**

EXPERIENCE

9/2018–4/2019
Full-time

Internship Researcher — **TU-Freiberg, Germany**
I use a kinetic model written in Matlab for the fitting of experimental data of the kinetics of adsorption process for the reduction of greenhouse gases from diesel engines. I developed a repository of the plots using python (Matplotlib, NumPy, SciPy, and Pandas). I attained well adaptation to the German working environment.
`Python / Matlab / LaTex`

8/2015–8/2018
Full-time

Researcher — **Universidad de Antioquia**
I calculated several mathematical problems (NumPy, SciPy), plotted results (Matplotlib) and analyzed data (pandas) for the reduction of nitrogen oxides from diesel engines. I developed scripts to calculate reagents amounts, model data, and process large files of data. I oversaw the gases inventory.
`Python / Matlab / LaTex`

6/2011–12/2011
Full-time

Research Assistant — **CENIVAM**
I performed chemical reactions, collected data, and modeled the kinetics of the allylic oxidation of an essential oil (α-pinene) for fine chemistry.
`Matlab / Office`

EDUCATION

2015-2020

PhD in Chemical Engineering — **Universidad de Antioquia**
Research on the reduction gases (NO, NO_2) from diesel engine exhausts. I used Python libraries to calculate several mathematical problems (numpy, scipy), to plot results (matplotlib) and to analyze data (pandas). Writing of a manuscript in LaTeX.

2012-2014

MSc in Materials — **Universidade Federal de Itajubá**
Production and characterization of titanium dioxide thin films for photovoltaic cells. Computations using Matlab®.

2005-2011

Chemical Engineering — **Universidad de Antioquia**
Simulation of the selective non catalytic reduction of nitrogen oxide using Chemkin ®. Programming in Matlab® of chemical engineering equipment, such as storage vessel, distillation column, and heat exchanger.

COURSES

2021	JavaScript course	SOLOLEARN
2020	AWS Fundamentals: Going Cloud-Native	Coursera
2020	Google IT Automation with Python (courses 1, 2, 3, and 4)	Coursera
2020	Django for Everybody Specialization	Coursera
2020	Machine Learning Foundations: A Case Study Approach	Coursera
2020	Introduction to Web Development	Coursera
2020	Neural Networks and Deep Learning, and Improving Deep Neural Networks	Coursera
2020	Python Classes and Inheritance	Coursera
2015	Programming for Everybody (Python)	Coursera
2014	An Introduction to Interactive Programming in Python	Rice University / Coursera
2010	Informática: Diseño de Bases de Datos en SQL	SENA Virtual

PROJECTS

2021 **Web application for calculating the fortnight salary according to Colombian legislation.** Click here to see.
HTML, CSS, Javascript, Netlify

2020 **Natu&Fresh: Web page for the CRM of a ficticious grocery's company.** Click here to see.
Python, Django, AWS (S3, RDS), Heroku

2020 **Final project for the Django for Everybody Specialization on Coursera.** Click here to see.
Python, Django, SQL, pythonanywhere

2020 **Building and training of an artificial neural network for the modeling of enzymatic hydrolysis.**
Keras, NumPy, Matplotlib

2020 **Modeling of the Tri-reforming reactions (minimization of the Gibbs free energy).** NumPy, SciPy, Matplotlib

LANGUAGES

Spanish: native.
English: C1 (EF SET 67/100), B2 (TOEFL ITP 563/677).
Portuguese: advanced (learned by living in Brazil).

REFERENCES

Available upon request.

HOBBIES

Riding bike, playing soccer, and tennis. Reading.