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Portfolio

ANDRÉS CAMILO ÁLVAREZ MONTOYA

WHO AM I?

Python developer Chemical Engineer and PhD in Chemical Engineering currently working as a full time Python developer to maintain a web page. Have a great ability to apply new knowledge to other fields and a great adaptability to new jobs environments. My key strength are to learn quickly and auto didactically by watching videos or reading books and to display ability to research new topics.

Skills

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

EXPERIENCE

5/2021–current
Full-time

Python Developer — **Globant**

I collaborated to maintain the back end development of a CMS written in django for a logistic company. I have made contributions to the project to fulfill constantly changing business requirements. I wrote algorithms to update the images hosted in Azure of several sites to improve performance and reduce size of them.

`Python / Django / MySQL / Azure`

9/2018–4/2019
Full-time

Internship Researcher — **TU-Freiberg, Germany**

I used 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	CS50x: CS50's Introduction to Computer Science	**edX**
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	**Coursera**
2010	Informática: Diseño de Bases de Datos en SQL	**SENA Virtual**

SOME OF MY PROJECTS

2021 **Web application that show some engineering-related problems that let the user change parameters to see how they affect the result** Click here to see. **Python, Django, Heroku, NumPy, Matplotlib, pandas, SciPy**

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

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

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

LANGUAGES

Spanish: native.
English: C1 (EF SET 67/100), B2.
Portuguese: advanced (learned in Brazil).

REFERENCES

Available upon request.

HOBBIES

Riding bike, playing soccer, and tennis. Reading.