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👤 Portfolio

# ANDRÉS CAMILO ÁLVAREZ MONTÓYA

Chemical Engineer

## WHO AM I?

Chemical Engineer enthusiastic about programming and data science and willing to assume new challenges. My key strength is to learn quickly and autodidactically by watching videos or reading books. Have a great ability to apply new knowledge to other fields and a great adaptability to new jobs environments.

## EXPERIENCE

9/2018–4/2019  
Full-time

### Internship Researcher

I Modeled, simulated, and fitted data of the kinetics of the adsorption/desorption of  $\text{NH}_3$ .  
Python / Matlab / LaTeX

TU-Freiberg, Alemania

8/2015–8/2018  
Full-time

### Researcher

I calculated several mathematical problems (NumPy, SciPy), plotted results (Matplotlib) and analyzed data (pandas) for the reduction of nitrogen oxides from diesel engines.  
Python / Matlab / LaTeX

Universidad de Antioquia

6/2011–12/2011  
Full-time

### Research Assistant

I collected data and modeled the kinetics of the allylic oxidation of an essential oil ( $\alpha$ -pinene) for fine chemistry.  
Matlab / Office

CENIVAM

## EDUCATION

2012–2014

### MSc in Materials

Production and characterization of titanium dioxide thin films for photovoltaic cells. Computations using Matlab®.

Universidade Federal de Itajubá

2005–2011

### Chemical Engineering

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.

Universidad de Antioquia

## COURSES

2020

### AWS Fundamentals: Going Cloud-Native

AWS / Coursera

2020

### Google IT Automation with Python (courses 1, 2, 3, and 4)

Google / Coursera

2020

### Django for Everybody

University of Michigan / Coursera

2020

### Machine Learning Foundations: A Case Study Approach

University of Washington / Coursera

2020

### Introduction to Web Development

University of California, Davis / Coursera

2020

### Neural Networks and Deep Learning, and Improving Deep Neural Networks

deeplearning.ai / Coursera

2010

### Informática: Diseño de Bases de Datos en SQL

SENA Virtual

## PROJECTS

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.

# Andrés Camilo Álvarez Montoya

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November 25, 2020

## **Hiring Team Human Resources Department**

Dear Hiring Manager,

I am very pleased to discover that you are looking for a Python Developer to join your team. As a chemical Engineer who have solved problems related to Chemical Engineering (heat exchangers, distillation columns, and storage vessels) using programming techniques in MATLAB® and Python, I believe that I have all the enthusiasm to assume new challenges in the field of Python Programming.

Since last six years, I have dedicated my spare time to learn Python to perform all the calculations in my day to day studies and work. I have studying and reading about the most popular Python libraries such as NumPy, Matplotlib, pandas, SciPy, Django and something about TensorFlow and scikit-learn. With those I have done projects involving ordinary differential equations, complex graphs, and recently neural networks.

I display an ability to adapt quickly to changing situations and have proved it by working successfully in work environments in Colombia, Brazil, and Germany. Also, I am an autodidact person since I have taken about 10+ online courses in both, English, and Spanish, in which I have had superior performance. I think that adaptability and autodidactically are two essential abilities to apply for an opportunity with new challenges. In the courses I have taken, I have got knowledge in Python, web development which I want to apply in a new position and I will not hesitate to learn new technologies.

I would like to be part of a team work to share my experiences and to learn about technology and grow in a company like yours. Please feel free of contacting me if you have any further question by phone (+57 3015634548) or by e-mail ([acalvm@gmail.com](mailto:acalvm@gmail.com)).

Sincerely,

Camilo Álvarez M.