



# ANDRES RESTREPO

## MACHINE LEARNING ENGINEER / DATA SCIENTIST

### PERSONAL PROFILE

Systems Engineer and Master in Information and Communication Sciences. Experience in Machine Learning, Data Science, and Data Engineering at industry and academic levels. Experience in Machine Learning and Deep Learning techniques using Python, TensorFlow, and PyTorch. Also experience in distributed processing of large volumes of data using Apache Spark, Python, and Scala. Additionally, I work as a part-time university professor and researcher in areas of artificial intelligence. My experience and results in research expose my passion for extraordinary fields such as Machine Learning and data science.

### CONTACT ME



Bogota, Colombia. In process of relocation to Berlin, Germany.



aorestrepor@correo.udistrital.edu.co



+573125523179



[www.linkedin.com/in/aorestrepor](https://www.linkedin.com/in/aorestrepor)



<https://github.com/AndresRestrepoRodriguez>

### TECHNICAL SKILLS

- Python, Scala, R, SQL
- TensorFlow, PyTorch, Apache Spark, Keras, Scikit-Learn, Numpy, Pandas
- Docker, Fask, FastAPI, ONNX.
- Git, DVC.
- Oracle, PostgreSQL
- MongoDB, Redis ElasticSearch
- AWS, GCP.

### LANGUAGES



Spanish: Native



English: Professional Working



German: Basic

### WORK EXPERIENCE

#### Machine Learning Engineer

**Vozy** / April 2021 - Present

- Research and implement Deep Learning models for Text-To-Speech (TTS), generating synthetic voices with Colombian, Ecuadorian and Mexican accents.
- Research and implement Deep Learning models for Speaker Recognition.
- Deploy models in cloud environments through APIs.
- Search, generate and validate datasets to train and test Deep Learning models.
- Perform version control of developments and datasets.
- Python, Pytorch, TensorFlow, ONNX, Docker, GIT, DVC, GCP, AWS, Flask, FastAPI, MongoDB.

#### University Professor

**UNIR** / August 2020 - Present

Part-time Researcher Professor, in fields such as Machine Learning, DataMining and Natural Language Processing.

- Principal researcher of the Research Project "Learning analytics model based on emotional metrics for second language learning mobile applications".
- Professor of the subjects of language processing, machine learning and data mining.

#### Data Engineer

**Bluetab Solutions** / August 2020 - April 2021

- Migration, implementation, and optimization of data pipelines and ETL.
- Design, specification and generation of meshes for scheduling the execution of data processing jobs using Control-M.
- Support for clients in solving problems and bugs in Machine Learning projects.
- Scala, Apache Spark, PySpark, Maven, Jenkins, Artifactory, Git, HDFS.

## RELEVANT PAPERS

Emotional characterization of children through a learning environment using learning analytics and AR-Sandbox

Hyperparameter Optimization for Image Recognition over an AR-Sandbox Based on Convolutional Neural Networks Applying a Previous Phase of Segmentation by Color-Space

Image Classification Methods Applied in Immersive Environments for Fine Motor Skills Training in Early Education

Time Series for Evaluation of Performance Metrics as of Interaction with an AR-Sandbox Using Brain Computer Interfaces

Segmentation methods for image classification using a convolutional neural network on AR-sandbox

Advanced Clustering Techniques for Emotional Grouping in Learning Environments using an AR-Sandbox

[See more here](#)

## BOOKS

Convolutional neural networks using Keras and GPU acceleration

Accelerating image fusion through heterogeneous computing

## CONFERENCES

15th International Conference on Artificial Intelligence Applications and Innovations

11th Annual International Conference of Education, Research and Innovation

The 2022 online International Conference on Information Technology & Systems (ICITS'22)

## Python Developer - Machine Learning Engineer - Data Scientist Freelance / September 2018 - August 2020

- Develop and document a software for the comparison of own and pre-trained convolutional neural network models through transfer learning for the classification of satellite images. Comparison of CNN Models in Aerial Image Classification (CCNN-AI).
- Implement algorithms for satellite image fusion under a heterogeneous CPU/GPU architecture.
- Develop and document software for the analysis and visualization of tweets from Twitter. Data Analytics Twitter.
- Develop and document software for creating, defining, and training convolution neural networks for image classification (computer vision). Design CNN App-Web.
- Systems engineer at Institute for Research, performing text analytics for research projects.
- Development and documentation of software for application of image segmentation techniques and their evaluation using similarity indices. Image-Segmentation Assessment Comparison.
- Python, Flask, Keras, TensorFlow, CUDA, Tweepy, JavaScript, HTML, R, PIL, OpenCV, Scikit-Learn,

## EDUCATIONAL HISTORY

### District University Francisco Jose de Caldas

Master in Information and Communication Science | Aug 2019 - Sept 2022

- Master's thesis with option for laureate thesis. Thesis "Learning analytics model based on emotional metrics for second language learning mobile applications".

### District University Francisco Jose de Caldas

Bachelor in Systems Engineering | Aug 2013 - Jun 2019

- Laureate bachelor's degree project. Project "Prototype of an immersive environment based on augmented reality using gesture control devices and brain-computer interfaces for fine-motor therapy in children".

## RESEARCH

### Publications

13 papers published in international journals. On topics like machine learning, deep learning, computer vision, learning analytics, high-performance computing.

### Conferences

Speaker at 3 international conferences.

### Books

Co-author of 2 books. One of them in deep learning and convolutional neural networks. The other in fusion of images in heterogeneous computing.