

Juan Sebastián Bravo Santacruz

[Portfolio](#) | [LinkedIn](#) | [GitHub](#)

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ELECTRONIC ENGINEER

Electronic engineer, with a strong academic background in **machine learning**, signal processing and **computer vision**. Passionate about Machine learning, specially **image processing** and **generative AI**. I have practical experience in Python, using TensorFlow, scikit-learn, and PyTorch for **machine learning** and **deep learning** projects. Completed projects involving **generative AI** and **LLM** on Azure, and **ETLs** using **SQL** and PySpark in Databricks. Eager to enhance programming skills and contribute to projects in recommender systems, ranking systems, image processing, and other focus areas with a basic understanding of statistics and hands-on experience in exploratory data analysis.

EDUCATION

Pontificia Universidad Javeriana

Bachelor of Science in Electronics Engineering

Bogotá, Colombia

Jul 2018 – Sept 2023

GPA : 4.57/5.00 — Ten Academic Excellence Awards

Relevant Courses : Artificial Intelligence (4.8/5.0), Image Processing and Computer Vision (5.0/5.0), Signal Processing (4.8/5.0), Continuous Time Signals (4.9/5.0), Discrete Time Signals (5.0/5.0).

EXPERIENCE

Big Data & Analytics Intern

Accenture

Jan 2023 – Jul 2023

Bogotá, Colombia

- Assistance in the development of proof of concept (**PoC**) chat bot using **generative AI** and **LLM** on **Azure**. Use of FormRecognizer, Azure Functions, and OpenAI suite.
- Design of scripts for the implementation of **ETLs** in **Databricks**, using technologies such as **SQL** and **PySpark**. Use of **datalakes** and **data warehouse**.
- Support and monitoring of infrastructure deployed in the **AWS** cloud.
- Development of infrastructure as code IaC using **terraform** on architecture deployed in the **AWS** cloud.

Teacher Assistant

Pontificia Universidad Javeriana

Aug 2020 – Dec 2022

Bogotá, Colombia

- Teacher assistant of the subject Continuous Time Signals.
- Teacher assistant of the subject Signals and Systems.

PROJECTS

Thesis: Multimodal system to assist in the diagnosis of Mild Cognitive Impairment from MRI Images [Source Code](#)

- Classification of volumetric MRI images of the brain using **deep learning** (Resnet-50) and **machine learning** (Tested the following algorithms: XGBoost, SVM, Logistic Discriminant, Random Forest, Dense Neural Networks).
- Multimodal system (based on a **regression model** and **MLP**) involving MRI images classification and cognitive test results, for giving a probability of having MCI.
- Use of **Bayesian Optimization** algorithm for **hyper-parameters tuning** of machine learning models.
- Design of User interface involving image importing, image visualization (before and after skull stripping) and the diagnosis. App was hosted at [huggingface](https://huggingface.co).

Skull Stripping from MRI Images using 3D U-Net

[Source Code](#)

- **Preprocessing** of volumetric MRI images of the brain (**Filtering, normalization, resizing**).
- Training of a 3D U-Net network using **Keras** for semantic segmentation of brain in volumetric MRI images.

AF Classification from a single lead of ECG recording using machine learning

[Source Code](#)

- Preprocessing of ECG signals (**Filtering**, QRST cycle detection, **feature extraction**).
- Training of a **deep neural network** (DNN) for classifying ECG recordings as Atrial Fibrillation or Normal Control patients.

LANGUAGES

Spanish : Native
English : Certified C1, IELTS score: 7.5

TECHNICAL SKILLS

Programming : Python, MATLAB, C, SQL
Libraries : Pytorch, Tensorflow, scikit-learn, Keras, Pandas, Numpy, OpenCV, SciPy, Matplotlib, langchain
Tools : Git, Databricks, Jupyter Notebooks, Google Colaboratory
Clouds : AWS (Basic), Azure (Basic)

CERTIFICATIONS

- [Generative AI Fundamentals — Databricks](#)
- [Lakehouse Fundamentals — Databricks](#)
- [CS50's Introduction to Artificial Intelligence with Python — HarvardX](#)

AWARDS

- Order of Academic Merit — Pontificia Universidad Javeriana
- Ten Academic Excellence Awards — Pontificia Universidad Javeriana
- Honors Mention for Thesis Work — Pontificia Universidad Javeriana
- José Gabriel Maldonado Maldonado, S.J. Award — Pontificia Universidad Javeriana: Given for outstanding academic performance and exemplary commitment, behavior, and dedication to the Faculty and degree program.