Mauro Alejandro Jimenez Medina

Electronics Engineer and Data Engineer

Barranquilla, Colombia | mauroalejandrojm | jmauro@uninorte.edu.co

SKILLS

Machine Learning	NumpPy, Pandas, Scikit-Learn, Keras, PyTorch, NLTK, Weka, Google Colab.
Databases	MongoDB, PostgreSQL, MySQL, MariaDB.
Programming and Tools	Python3, C++, C#, VHDL, Javascript (ES6), Node.js, Nuxt.js, Vue.js, HTML5, CSS3, Git, Docker, Google Cloud, AWS, Bitbucket, Agile (Scrum), AdobeXD.
Languages	Spanish (Native) and English (ITEP).

EXPERIENCE PROFESSIONAL

DexFreight - Data Engineer 08/2019 - Present
Barranquilla, Atlántico

• VMRS decoding system using a speech-to-text transformer optimized to process audio samples with a signal-to-noise ratio over -58dB.
• Fleet manager algorithm using a state machine optimizing trucking operation, reducing driver utilization by 5%, deadhead miles by 27%, and non-revenue hours by 44%.
• Trip planning algorithm combining geospatial features with constraints functions and Bayes theorem for processing thousands of records in real-time with an average response time under 5s.
• Shipment search system using filters based on available and customizable features with an average response of 600ms.
• ETL pipeline for clustering geospatial data of shipments to map layers optimizing data storage by 98% to improve customer experience using thousands of records.
• Designed and deployed a recommendation model for matching shipment preferences using the features and user’s stated preference with an average response of 600ms.

Uninorte - Assistant Professor 07/2019 - 07/2020
Barranquilla, Atlántico

• Instructed classes for digital signal processing using Matlab and Python focused on UI design using the Qt framework with an average score of 4.7/5 in the professor's review..
• Laboratory assistant for the course of digital electronics design with DC-AC prototypes using the Arduino UNO microcontroller board with an average score of 4.3 in the professor's review.

Psychology PhD Thesis Study - Data Analyst 06/2019 - 08/2019
Barranquilla, Atlántico

• Designed and Analysis of experiments for an instrument that measures the falsehood or credibility of stories in children between 8 and 11 years old.
• Identified linguistic descriptors for the study group using techniques from natural language processing from a neuropsychology exploited with ML algorithms.

MadnessLab - Backend Developer 06/2019 - 12/2019
Barranquilla, Atlántico

• ELT pipelines for processing call audio files recorded for credit institutions or financial companies with support for over 10 FFmpeg codecs.
• Sensitive reports and analytics for users (and operators) for improving the quality of service by 20% using techniques based on natural language processing.

EXPERIENCE ACADEMIC

Quatum Computing Framework - Python Developer 08/2021 - 10/2021
Remote, Mexico

• Tutoring and subsidiary in Python for the thesis modelling of a system/environment in the framework of deeper entropy rise (SEA-QT) using random matrixes.

Autonomous Surface Vessel - Backend Developer 01/2018 - 12/2018
Barranquilla, Atlántico

• Developed a prototype related to Autonomous Surface Boats using a GPS receiver for measuring the position of the boat, a compass and other sensors and actuators for navigation.
• Search algorithm using spherical geometry for the navigation with an error of 2 meters, leading to an acceptable error due to low-cost hardware limitations.

AISMAP - Frontend Developer 01/2018 - 06/2018
Barranquilla, Atlántico

• Build the UI for a mobile application on the Automatic Identification System (AIS) used by ships and vessel traffic services.
• Accomplished time latency for the prototype close to 5s for transmitting data in real-time.
• The AIVDM / AIVDO communication protocol was used to collect and integrate information from publicly available sources and vessels using the AIS protocol.

Trucking Tracking - Full-Stack Developer 01/2018 - 06/2018
Barranquilla, Atlántico

• Designed the UI for the trucks in transit with historical and real-time locations with an average response of 200ms using Javascript and HTML5 and CSS3.
• Deployed the web application using Amazon Elastic Cloud Computing service EC2 for the server and the Amazon Relational Database Service for storage.

PUBLICATIONS

International Journal on Communications Antenna and Propagation (IRECAP) 06/2019 - 12/2019

Obstacles, Speed and Spreading Factor: Insights in LoRa Mobile Performance.

COURSES & CERTIFICATES

API Academy Certification Program 08/2020 - 05/2021

• API Designer.
• API Security Architect.
• API Product Manager.

Convolutional Networks for Visual Recognition 06/2018 - 08/2018

• CS231n.

International Test of English Proficiency ITEP 04/2018 - 06/2018

• CEFR Level B2.

EDUCATION

MSC on Electronics Engineering 06/2019 - 12/2022
Universidad del Norte

Identification of expressive descriptors for style extraction in music analysis using linear and non linear models.

BSC on Electronics Engineering 06/2014 - 01/2019
Universidad del Norte

System for the measurement of musical similarity, using expressive markers considering the acoustic intensity and temporal metrics.