



# Henry Requena

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## Skills

**Backend Development** | Python • Java • NodeJS  
**DevOps** | Azure Devops • Pipelines • Docker • GitHub • SonarQube • UnitTests  
**Data Science** | SQL • Pandas • NumPy • Scikit-learn • Matplotlib • Tableau  
**AI** | LLM Models • Computer Vision • Machine Learning • Speech Recognition  
**Hardware** | Nvidia Jetson Nano • CUDA GPUs • Raspberry Pi • Arduino • ESP32  
**Cloud** | Azure Functions • Azure AI • ML Studio • GCP • Vertex AI • Dialog Flow

## Experience

**NTT DATA Colombia** | **Python, OpenAI, Azure Functions, Document Intelligence**  
Engineer | September 2024 - Present

Document Reading and Interpretation Projects - Client: Sura

- Client Definitions
- Creation of PoCs
- Use of Azure Durable Functions (Orchestration, Activities, Triggers)
- Data Processing and Validation
- Integration of Artificial Intelligence (Azure OpenAI)
- Data Extraction with OCR (Azure Document Intelligence)
- Error and Exception Handling
- Technical Documentation
- Database Management
- Unit Testing (Pytest - SonarQube Coverage)
- Training and Knowledge Transfer
- Version Control in Azure DevOps
- Pipeline Deployment
- Production Deployment

**Consulting in AI and IoT** | **Python, GCP, Docker, MongoDB, Computer Vision**  
Project Engineer | December 2022 - September 2024

Main Responsibilities

- Analysis of issues and evaluation of possible solutions.
- Detailed engineering and cost estimation.
- Construction of activity schedules with task delegation to the work team.
- Presentation of proposals to the client.
- Direct communication with the client during project development.
- Contact with non-Spanish-speaking suppliers (Siemens, Honeywell).

Gas Meter Calibration System for Analog and Digital Meters with Computer Vision

- Designing a new strategy for number detection on gas meters to optimize calibration times by directly reading the volume on the display.
- Training a detection model with YoloV5.
- Developing software for image capture and current volume prediction of the meter (OpenCV, Pytorch, NumPy, Flask).
- Functions for writing volume to the control system with Siemens PLC.

Monitoring and Data Processing Software in Automated Plant

- Reading states and measurements of transmitters, motors, proportional valves, and switches (JavaScript).
- Storing states and measurements in a database (MongoDB).
- Calculating KPIs based on instrument states.
- Generating monthly maintenance reports (Tibco Jaspersoft).

**GIIM Group Universidad Autónoma del Caribe** | **Android, Java, OpenCV, Robotica**  
Senior Research Group Member | August 2022 - March 2024

Android Application for Intelligent Distribution Robot Control

- Designing an application in Android Studio to control a robot that distributes objects anywhere, with movement control and automatic activation to predetermined areas.

3D Printing Error Monitoring and Detection System with Computer Vision

- Developing a complete software implemented on a Raspberry Pi 4 with Ubuntu Server. Responsible for detecting 3D printing errors, sending alerts and temperatures to a graphical interface, and controlling the 3D printer from anywhere in the world (Python, OpenCV, VueJS, IoT, CNC).
- Training a YoloV8 model using an error dataset I created.
- Configuring a Flask server and setting up software as a service on Ubuntu (Linux Server).
- Designing functions to control the machine with serial commands.
- Installing a graphical interface in the cloud (Google Cloud Platform).

## Education

**Instituto Tecnológico y de Estudios Superiores de Monterrey**

M.S., Applied Artificial Intelligence  
In Progress | Virtual Modality

**Universidad Autónoma del Caribe**

B.S., Mechatronics Engineering  
March 2024 | Barranquilla, Colombia  
GPA: 4.5/5.0

## Certifications

**Microsoft** | **Azure Data Scientist Associate**  
(2024/2025)

**Microsoft** | **AI Fundamentals** (2024/2025)

## Honors and Awards

**Hackathon Barranqui-IA** | First Place  
Winner | Google Dev. Group 2024,  
Barranquilla

**Engineering Faculty Graduation Ceremony** |  
Meritorious Thesis | Universidad Autónoma  
del Caribe | 2024, Barranquilla

**Engineering Faculty Graduation Ceremony** |  
First Honors for Highest GPA | Universidad  
Autónoma del Caribe | 2024, Barranquilla

## Scientific Publications

**MDPI - Engineering Proceedings** | Remote Control Device for the Detection and Correction of Errors in the FDM 3D Printing Process in Real Time

**Lima, Peru, November 2023**

## Courses

**IBM Cognitive Class:**

- Data Analysis Using Python
- Data Science Tools
- Getting Started with Enterprise Data Science

**University of Michigan:**

- Applied Machine Learning with Python
- Introduction to Data Science with Python

**Udemy Business:**

- Master Generative AI
- Microsoft Azure Functions - Serverless Solutions

**NTT DATA University:**

- Introduction to DevOps
- Introduction to GIT
- Introduction to Secure Development
- Security Training
- Privacy of Business

Tec de Monterrey:

- Data Science and Analytics
- Data Visualization
- AI and Advanced Analytics

## Languages

Spanish - Native  
English - Advanced  
Portuguese - Basic

## Interests

Travel • Food • Trombone Musician • Martial Arts • Personal Growth