

Hendrix E. Peralta Gomez

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• [Personal Website](#) • [GitHub](#) • [LinkedIn](#)

PROFESSIONAL EXPERIENCE

I studied Mechatronics Engineering at a Dominican university (INTEC) while working full time as a technical assistant to pay for my studies. After graduation, I spent **over four years** participating in and managing projects, including data-driven system improvements. For instance, I successfully introduced a new spare parts management system at Grupo Rojas Packaging. Coupled with this, I added new spare parts data collection and classification guidelines. These changes allowed me to perform data analysis to address the inventory challenges, optimize inventory efficiency, and identify critical spare parts, determining their ideal stock based on their usage history. This resulted in an **equipment downtime reduction of 20%**. Currently, I work as a freelance data analyst for remote sensing projects in the QuaRCS lab.

WORK HISTORY

Nagoya University (QuaRCS-lab, Japan)

May 2025 – Present

Industry: Educational Institution

Position: Data Analyst (freelance)

- Cleaned and integrated over 200 remote sensing variables into a dataset covering Bolivia's 339 municipalities from 2012 to 2019.

Grupo Rojas Packaging (Dominican Republic)

Nov 2018 – Oct 2021

Industry: Food Packaging Manufacturing

Position: Maintenance Engineer

- Identified critical spare parts and improved their availability by creating and implementing a new inventory management data system coupled with a new spare part classification system and using part usage trends data, reducing equipment downtime by 20%.
- Created an automated workflow to make maintenance trends dashboards, reducing preparation time for weekly meetings by 90%.
- Oversaw the successful installation of five new packaging production machines and their respective operator training.
- Created and implemented new processes documentation that helped the maintenance department achieve the highest score amongst all company departments in the ISO certification.

Quala Dominicana (Project department, Dominican Republic)

Jun 2017 – Aug 2018

Industry: Food and Beverage Company

Position: Project Analyst

- Designed the layout for a new beverage manufacturing line, reducing the planned floor space usage by 40%, ensuring scalability for future expansion.
- Collaborated with engineers from various fields to design production infrastructure, including electrical, water, and air supply systems.

INTEC (Industrial Processes lab, Dominican Republic)

Nov 2013 – Jun 2017

Industry: Educational Institution

Position: Technical assistant

Achievements:

- Enhanced the quality of the "Industrial Process II" and "CAD/CAM" courses by developing their course guidebook and evaluation criteria.

- Successfully led a project to design and build a tile manufacturing machine for the seismic laboratory.

EDUCATION

Nagoya University – M.A. Economic Development and Policy Management	Mar 2025
INTEC – B.E. Mechatronics Engineering	Oct 2018

CERTIFICATIONS, SKILLS

Statistics and Econometrics:	Difference in Differences, Synthetic control, Geospatial econometrics.
Programming Languages:	Python, R, SQL, C, Java.
Libraries:	Pandas, Geopandas, ScikitLearn, NumPy, Tensorflow, SciPy.
Machine Learning:	Clustering, Classification, Regression.
Deep Learning:	Image segmentation (U-Net).
Visualization Tools:	Tableau, Seaborn, Matplotlib.
Certifications:	Google Data Analytics Professional, R Data Analyst, Project Management, JPT 565 points (Equivalent to JLPT N2).

PROJECTS

Bolivian municipalities regionalization (K-means, Agglomeration)	Nov 2024 – Jan 2025
<ul style="list-style-type: none"> • Clustered all 339 municipalities in Bolivia into 5 analytical regions based on performance across 15 sustainable development indicators and geographic proximity. Identifying a highly vulnerable central region where over 60% of the indicators had less than 40% achievement. 	
Prediction of Sustainable Development indicators (Remote sensing data, Ridge, Lasso, Elastic-net)	Aug 2024 – Nov 2024
<ul style="list-style-type: none"> • Created 15 machine learning models, one for each sustainable development goal, using over 20 remote sensing variables to predict SDG indicators across 339 municipalities in Bolivia. • The model for “SDG 1: No poverty” achieved 70% predictive accuracy (R^2), demonstrating the potential of remote sensing data to support cost-effective policy planning. 	

About me

My experience as an engineer taught me that data analysis is a powerful tool to identify improvement opportunities and develop impactful solutions. This realization expanded my interest beyond engineering, as I saw the potential of data analysis to address broader societal challenges, such as urban planning, public transportation, and sustainable development.

Motivated to strengthen my analytical skills, I applied for and was awarded the highly competitive MEXT Scholarship from the Japanese government in 2021, becoming one of the only two recipients from the Dominican Republic that year. This opportunity allowed me to pursue a master's degree at Nagoya University's Graduate School of International Development, where I specialized in causal Analysis and machine learning at the QuaRCS Laboratory.

For my thesis, I used publicly available remote sensing data and machine learning methods to predict Sustainable Development indexes at the municipal level in Bolivia. My Research demonstrated that remote sensing, combined with machine learning, can provide valuable insights to inform policy decisions in data-constrained countries, offering a cost-effective alternative for SDG monitoring in developing countries.

You can view the results of this and other projects, as well as learning more about me on my personal website:
hendrixperalta.github.io