



Jair Armando Martinez Castillo

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Experience

The Palace Company

Mérida, Yucatán

Data Engineer / Data Scientist

November 2024 – Ongoing

- **Data Engineer:** Utilized BigQuery to manage and optimize datasets, implementing validation procedures that ensured a great percentage of a data integrity rate across the company.
- Designed and implemented scalable data processes using Dataform, achieving a 1900% improvement in processing time (e.g., reducing tasks from 10 minutes to 30 seconds), lowering billing costs compared to Data Fusion, and enhancing accuracy in complex workflow management.
- Connected data sources to LookerML and created dashboards to visualize and analyze key performance metrics.
- Utilized tools such as PySpark and Airflow to orchestrate ETL processes, optimizing data workflows and enhancing data loading efficiency by making it more structured, interpretable, and actionable for downstream analytics.
- **ML Engineer:** Implemented a revenue forecasting model using Meta's Prophet pre-trained model, integrating the company's "Big Promos" as a critical factor to account for seasonality and promotional impacts. This was accomplished with the application of tools in Vertex AI environment.

Huawei

Mérida, Yucatán

ML Engineer

November 2024 – April 2025

- Designed and implemented an advanced Convolutional Neural Network (CNN) to detect and classify wildlife sounds, driving innovation in biodiversity monitoring and conservation.
- Architected an end-to-end AI pipeline, from preprocessing raw audio data to deploying the optimized model on Huawei Cloud, enabling scalable and real-time wildlife sound analysis across diverse ecosystems.
- Contributed to Huawei's global Tech4Nature initiative by merging AI innovation with sustainability, creating a transformative platform for ecological research and conservation impact worldwide.
- Ensured the solution's adaptability for future expansions, including integration with IoT sensors and additional species recognition modules.

Plenumsoft

Remote

Data Engineer

April 2024 – November 2024

- Contributed to a high-impact collaborative project with Texas A&M, developing advanced data pipelines and Python-based solutions for economic analysis.
- Designed and optimized web scrapers using Selenium and BeautifulSoup, enabling efficient collection of large-scale economic data.
- Transformed and curated datasets for economic analysis, ensuring quality and integrity for actionable insights.
- Developed algorithms and models to analyze complex datasets, driving informed decision-making processes.

Centro Geo

Mérida, Yucatán

Data Scientist & Researcher

November 2023 – April 2024

- Conducted geospatial analysis on satellite imagery to monitor and quantify coastline changes in Progreso, utilizing advanced data science techniques to address environmental challenges.
- Developed and deployed regression models with Google Earth Engine, providing actionable insights into coastline dynamics and supporting sustainable development initiatives.
- Collaborated with interdisciplinary teams to transform complex geospatial data into visualizations, enabling stakeholders to assess environmental impacts effectively.
- Delivered a comprehensive report and interactive visualizations showcasing long-term trends, empowering policymakers and researchers with data-driven insights.

Ibits Academy

Remote

Business Intelligence Researcher

January 2023 – April 2024

- Conducted a comprehensive evaluation of state-of-the-art Business Intelligence (BI) tools, applying industry-standard frameworks like the Gartner Magic Quadrant to benchmark performance and capabilities.
- Investigated emerging trends in BI technology, identifying innovative solutions to address complex business challenges and improve organizational decision-making.
- Authored detailed research reports and presented findings to stakeholders, providing actionable recommendations that influenced strategic tool adoption and deployment.

Skills & Interests

Technical: Natural Language Processing (NLP), Machine Learning Models, GCP, AWS, Python, Apache Spark, Apache Airflow, Google BigQuery, LookerML, Dataform, Selenium, Google Earth Engine, Tableau, PowerBI, SQL, Geospatial Analysis, Linux, Apache Hadoop, Apache Iceberg, Snowflake, DBT.

Language: English (C2 - ITEP Certified), Spanish (Native).

Certifications:

- AWS Academy Graduate - AWS Academy Machine Learning Foundations (Badge Link)
- AWS Academy Graduate - AWS Academy Machine Learning for Natural Language Processing (Badge Link)
- AWS Academy Graduate - AWS Academy Cloud Data Pipeline Builder (Badge Link)
- AWS Academy - Cloud Foundations (Badge Link)
- Hugging Face - AI Agents Course (Badge Link)
- Data Cleaning Certification – Kaggle (Certificate Link)
- Feature Engineering Certification – Kaggle (Certificate Link)
- Data Visualization Certification – Kaggle (Certificate Link)
- Applied Data Science Specialization – Coursera (Certificate Link)

Interests: Machine Learning, ML Ops, Geospatial Research, Web Scraping, Data Architecture and Engineering, Visual Modeling, Martial Arts, Cooking, Literature, and Listening/Playing Jazz Music.

Education

Universidad Politécnica de Yucatán

Mérida, Yucatán

Data Engineering

Graduation Date April 2025