

Fernando Martinez-Lopez

New York, New York, United States

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Education

Fordham University

MASTER IN DATA SCIENCE - MSC

New York, N.Y., U.S.

January 2022 - May 2023

- **GPA** 4.00/4.00.
- **Relevant Courses:** Cloud Computing, Big Data Computing, Blockchain Technology, Data Mining, Machine Learning, and Deep Learning.

Quantic School of Business and Technology

MASTER OF BUSINESS ADMINISTRATION - MBA

Washington, D.C., U.S.

March 2021 - March 2022

- **Grade:** Honors.

Santo Domingo Institute of Technology (INTEC)

B.S. IN BUSINESS ENGINEERING

Santo Domingo, Dom. Rep.

August 2014 - April 2018

- **GPA** 3.81/4.00, Summa Cum Laude.
- INTEC Meritorious Scholarship (Awarded for top 1% program).

Academic & Research Experience

Fordham University

GRADUATE RESEARCH AND TEACHING ASSISTANT

New York, N.Y., U.S.

May 2022 - PRESENT

- Y. Zhao, **F. Martinez**, H. Xue, G. M. Weiss, "Admissions in the Age of AI: Detecting AI-Generated Application Materials in Higher Education," - Submitted (November 2023).
- **F. Martinez**, Y. Zhao, "Integrating Multiple Visual Attention Mechanisms in Deep Neural Networks," COMPSAC 2023.
- **F. Martinez**, M. Rahouti, A. Chehri, R. Amin, N. Ghani, "Rediscovering Fraud Detection in Bitcoin Transactions Using Machine Learning Models," WF-IoT23.
- E. Thrall, **F. Martinez Lopez**, T. Egg, S. Lee, J. Schrier, Y. Zhao, "Rediscovering The Particle in a Box: Machine learning regression analysis for hypothesis generation in physical chemistry lab," *Journal of Chemical Education*.
- Y. Ding, Q. Wang, **F. Martinez Lopez**, Y. Wu, Y. Zhao, "A Machine Learning Approach to Examine Personality, Adjustment, and Engineering Identity Among College Engineering Students", - Submitted (October 2023).
- **TA Courses:** Algorithms for Data Science, Data Visualization
- **Award:** GSAS Graduate Research Assistantship Award

Industry Experience

MUFG Americas

QUANTITATIVE MODELING - AVP

New York, N.Y., U.S.

July 2023 - PRESENT

- Develop, implement, and validate quantitative models for multiple desks, risk management, and other securities-related activities in compliance with CCAR planning.
- Ensure that models assess optimal performance and comply with regulatory requirements and internal policies.

Smart Energy

DATA SCIENTIST

New York, N.Y., U.S.

September 2021 - July 2023

- Develop end-to-end Machine Learning models to generate actionable business insights. These models drive marketing campaigns of 10,000+ Warm Leads daily, support customer retention strategies, and multiple operation processes.
- Query and perform hands-on data analyses, A/B experiments, and modeling over enormous datasets towards developing insights, recommendations, and presenting results to various stakeholders.

General Directorate of Internal Taxes

DATA SCIENTIST - RESEARCH AND ANALYTICS OFFICE

Santo Domingo, Dom. Rep.

April 2020 - September 2021

- Create, validate, test, and tune Machine Learning algorithms to detect tax noncompliance, manage risk behavior profiles, reduce tax gaps, and build advanced analytics engines.
- Take defined business objectives and produce analytics to provide stakeholders with data-driven insights that lead to improved tax auditing (the action through which the Tax Administrations seek to prevent taxpayers from incurring tax evasion or fraud).
- Present data results and recommendations to leaders.

General Directorate of Internal Taxes

DATA ANALYST - REGISTRY OFFICE

Santo Domingo, Dom. Rep.

September 2018 - April 2020

- Implemented Digital Forms of the National Taxpayer Registry.
- Designed and developed the new engine of automated tax assignment model for the Taxpayers' Registry based on the economic activities and the behavior of the taxpayers.
- Gained knowledge and Hands-on experience in Python and usage of machine learning algorithms.

- Establishment of a Risk-based Project Management System.
- Social Impact evaluated by Statistic indicators implementation.

Research Collaborations and Ongoing Projects

- Developing an Adaptive Multi-Modality Deep Learning Framework, targeting the identification of Zero-day DoS attacks by recognizing anomalies outside established patterns.
- Joint collaboration with the Fordham EDM lab to research methods to detect AI revised and mixed human/AI academic materials, enhancing the use of generative models for academic integrity.
- Joint collaboration with Harvard Medical School and the Massachusetts General Hospital exploring the use of ML methods to evaluate risks of Hydroxychloroquine Retinopathy after initializing HCQ medication.

Honors & Awards

2022	GSAS Graduate Research Assistantship Award , GSAS, Fordham University	New York, U.S.
2021	Honors , Quantic School of Business and Technology	Washington, D.C., U.S.
2021	Full International Scholarship , Ministry of Higher Education, Science, and Technology	Santo Domingo, Dom. Rep.
2021	Full Scholarship , Quantic School of Business and Technology	Washington, D.C., U.S.
2018	Summa Cum Laude , Santo Domingo Institute of Technology	Santo Domingo, Dom. Rep.
2014	Meritorious Scholarship (Awarded for top 1% program) , Santo Domingo Institute of Technology	Santo Domingo, Dom. Rep.

Skills

Programming Languages	Python, R, SQL, Bash, C++.
Data Science, Big Data & Machine Learning	Hadoop MapReduce, PySpark, PyTorch, TensorFlow, Keras, FB Prophet, OpenCV, Python (eg. scikit-learn, XGBoost, pandas, matplotlib, seaborn, plotly). Power BI, Tableau, ETL, Data science pipeline (cleaning, wrangling, feature engineering, visualization, modeling, interpretation), Google Cloud Platform (GCP),
BI & Miscellaneous Technologies	Microsoft Azure, APIs, Docker, BeautifulSoup, Excel, Git.
Languages	English, Spanish, Italian

Program Committees & Volunteering

2019-2022 Program Advisor , Program Advisory Committee of Business Engineering	Dominican Republic
2017-2018 Volunteer , TECHO	Dominican Republic

Personal Computing Projects

Academic Application Document Classifier

2023

- Built web application for the paper "Admissions in the Age of AI: Detecting AI-Generated Application Materials in Higher Education"
- Trained using proprietary datasets, and wiki dataset, classifying texts as AI-generated or Human-made.
- **Link:** <https://huggingface.co/spaces/ferdmartin/GradApplicationDocsApp>

Dog Breed Predictor Web Application

2022

- Built web application for the paper "Integrating Multiple Visual Attention Mechanisms in Deep Neural Networks"
- Trained using multiple datasets, predicting up to 130 classes (dog breeds).
- **Link:** <https://huggingface.co/spaces/ferdmartin/DogBreedsApp>

Fifa Scouting Future Soccer Stars - Machine Learning

2020

- Created a model to find future soccer stars on Fifa (Soccer video game), analyzing historical information and their evolution through time.
- Developed a web scrapper to extract young players' historical characteristics (skill ratings) and specialties.

Netflix Prize Competition - Participation

2019

- Participated in the Netflix Prize Competition hosted on Kaggle to predict user ratings for films towards improving their recommendation algorithm.