

OSCAR ALEJANDRO GOMEZ QUINTERO

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EDUCATION

New York University Abu Dhabi
B.S. Mathematics, B.S. Computer Science

Cum Laude - GPA: 3.89/4.00
Abu Dhabi, UAE

SKILLS

ML/Data: Python (PyTorch, TensorFlow, Scikit-Learn, MLflow, Kubeflow), SQL, Scala, Spark, R
Cloud/DevOps: GCP, AWS, Docker, Kubernetes, Terraform, FastAPI, Go, Git, Linux
Languages: English (C1), Spanish (Native) **Certifications:** Data Science For All - Correlation One (2022)

WORK EXPERIENCE

Senior Machine Learning Engineer
Nubank

Aug 2024 – Present
Bogota, Colombia

- Led ML infrastructure for lending expansion into Mexico and Colombia (14M+ customers), building Scala-based ETL pipelines for feature engineering and deployment of batch and online risk models to NU's AI Platform, enabling real-time decisions at scale.
- Implemented comprehensive monitoring and alerting framework detecting data drift, quality degradation, and model performance issues. Drove rapid incident response, maintaining continuous loan origination across markets.
- Established ML engineering best practices and scalable infrastructure, enabling rapid product launches across new geographies.

Machine Learning Engineer
Quipu Bank

Sept 2023 – Jul 2024
Bogota, Colombia

- Migrated credit scoring from batch to real-time inference, reducing approval times from 24 hours to under 2 seconds, while improving risk assessment accuracy. Deployed multimodal deep learning models (CLIP, XCLIP, Whisper) on GCP/AWS analyzing images, videos, audio, and tabular data.
- Implemented MLOps best practices, including the integration of MLflow for tracking experiments, model monitoring using BigQuery and Pub/Sub, and deploying APIs using FastAPI. Ensured the reliability of the infrastructure with Cloud Run and Cloud Build, and utilized Docker for containerization, while coordinating integrations with the risk and tech teams.

Ignition Associate
Scotiabank (ScotiaTech)

June 2022 – Sept 2023
Bogota, Colombia

- **Cloud Developer:** Deployed Azure Cloud Infrastructure using DevOps Pipelines and IaC (Terraform) to support application teams across the bank. Developed automated tests in Golang and documented the design and architecture of the pipelines.
- **Software Engineer:** Migrated Retail Risk Analytics Platform to GCP through architectural redesign and refactoring SAS code to Python. Researched and developed PoCs on GCP technologies (PubSub, Cloud Functions, Airflow/Composer).

Research Assistant / PhD Student

July 2021 – June 2022

Duke University, Department of Computer Science

Durham, NC, USA

- Researched explanation methods for data-driven systems using causal inference. Built interactive webapp for What-If/How-To analysis in relational data with a SQL extension. Project based coursework in AI, Database Systems, and Privacy/Fairness in ML.
- Led a team developing ML pricing models for proptech startup via Duke's Pro-bono Consulting Program.

Data Scientist

Aug 2020 – June 2021

Quantil S.A.S.

Bogota, Colombia

- Built end-to-end ML solution for credit risk prediction detecting 90%+ of largest delayed payments (ROC-AUC: 0.79).
- Analyzed homicide spatio-temporal dynamics in Bogota using Zero-Inflated Embeddings [1]. Studied COVID-19 quarantines and lockdown effects on domestic violence in Bogota using mobility data and Generalized Additive Models (GAMs)[2].
- Developed interpretation methods for Conditional Generative Adversarial Networks (cGANs) predicting robberies using SHAP values. Implemented fairness calibration for the Neural Network with kernel mean embeddings [3].

Machine Learning Intern / Research Assistant

Feb 2017 – Aug 2019

Nexquare, NYU Tandon, NYU Abu Dhabi

Dubai, New York, Abu Dhabi

- **Nexquare (2019):** Enhanced student performance and employability prediction models by developing interpretability and visualization modules and integrating Python/R backends, collaborating across Dubai and India teams.
- **NYU Tandon (2018):** Trained SVMs, Random Forests, and Neural Networks for credit risk prediction. Developed visual counterfactual explanations [4] earning 2nd place in the FICO XAI Challenge [5]. Generalized in published papers [6] and [7].
- **NYU Abu Dhabi (2017-2018):** Led the analysis of 10,000+ Arab/African records using audio analysis, ML, and visualization [8]. Built interactive webapp exploring musical similarity using k-means clustering, deep autoencoders, and t-SNE [9].

HONORS AND AWARDS

Full Scholarship: NYU Abu Dhabi

2016 – 2020

2nd Place: NYUAD International Hackathon

Apr 2020

2nd Place: FICO Explainable ML Challenge

Jan 2019

Best Admission Score (National): Universidad Nacional de Colombia

Apr 2016

Medals: International/Iberoamerican/Centroamerican Math Olympiads

2014 – 2016