FEDERICO DOMINGUEZ MOLINA

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EDUCATION

The University of Chicago Computer Science Dept. & Harris School of Public Policy **Chicago**, IL
M.S. in Computational Analysis and Public Policy (MSCAPP)   June 2024

Instituto Tecnológico Autónomo de México   Mexico City
B.A. in Economics, Honors   June 2020

PROFESSIONAL EXPERIENCE

Energy & Environment Lab   Chicago, IL
Research Analyst   October 2024 – Present
- Designed Serverless AWS Architecture to extract daily pollution data from over 10+ cities.
- Implemented AWS Lambda architecture with Python code to send pollution alerts to over 2,000 stakeholders

University of Chicago   Chicago, IL
Data Science Research Assistant   February 2023 – October 2024
- Collaborated on automating classification process of 500K+ Twitter users with Natural Language Processing
- Co-developed FastAPI web platform to play laboratory games and inform research on children's decision-making
- Created 10+ interactive visualizations and dashboards with Plotly to detect bias in 250+ policing research papers

Coding it Forward   Chicago, IL
Data Engineering Fellow   June 2023 – August 2023
- Automated data collection & cleaning for six websites with Python and reduced 10+ weekly hours of manual work
- Built a Python data platform allowing City of Long Beach's Climate Office to download data from 2010-2023, improving access and saving hundreds of work hours annually

deep_dive   Mexico City
Senior Data Scientist   October 2021 – October 2023
- Led automatic alert system project to help 20+ clients improve customers relationships via social media analytics
- Created serverless computing architecture to collect data of over 250,000 commercial goods for strategic pricing
- Developed machine learning recommender system to offer customized loans to over 500,000 borrowers

Junior Data Scientist   June 2020 – October 2021
- Extracted and parsed data from key Mexican governmental sources to support decision-making for 10+ clients
- Implemented dynamic Power BI dashboard to monitor government projects and avoid 50+ potential challenges
- Devised Python machine learning models to become a top inflation forecaster in Mexico

SELECT PROJECTS

Sports Betting Webscraping   July 2021 – April 2022
- Engineered serverless computing architecture to scrape odds of 3,000+ daily sport matches for maximum profit gain

Trading Platform Maintenance   November 2022 – September 2024
- Developed Python code to ingest thousands of stock prices for an existing daily trading platform
- Designed EC2 architecture and Python code to auto-trade over 5+ portfolios through Interactive Brokers

SKILLS

Technical: **Python** (requests, selenium, fastapi, flask, pandas, regex, transformers, pytorch, numpy, scipy, scikitlearn, xgboost, statsmodels, boto3, pyspark, psycopg2, sqlalchemy, streamlit, seaborn, matplotlib, folium, plotly), **R** (ggplot2, tidyverse, dplyr, mlogit, randomforest, xgboost, caret, stargazer), **SQL, C, SAS, MATLAB, Power BI**
Cloud Computing: **AWS** (Lambda, EC2, Route53, IAM, SQS, SNS, Glacier), **Databricks**
Publications: *Academic Copaganda: Police Research in the Black Lives Matter Era (w/ Dr. Robert Vargas, in review)*