

# 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  
*Data Scientist* June 2024 – Present

- Pioneered a global alert system to target air pollution advocates from 30+ cities using X, natural language processing, graph analysis and real-time pollution data
- Implemented 10+ in-house algorithms to verify the compliance of 350,000 Public Water Systems across the US for 45+ different pollutants

**University of Chicago** Chicago, IL  
*Data Science Research Assistant* February 2023 – June 2024

- 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 supervised 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 10+ portfolios through Interactive Brokers

## SKILLS

**Technical: Python** (requests, selenium, fastapi, flask, pandas, regex, transformers, pytorch, numpy, scipy, scikitlearn, xgboost, statsmodels, boto3, pyspark, psycpg2, 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, Neptune, Route53, IAM, SQS, SNS, Glacier), **Databricks**  
**Publications:** [Academic Copaganda](#) (w/ Dr. Robert Vargas)