Manuel A. Quintero Coronel

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Education

Massachusetts Institute of Technology, Cambridge, US　　　　　　　　　2023 - 2027
PhD In Social and Engineering Systems & Statistics.

University of Cambridge, Cambridge, UK　　　　　　　　　　　　　　　2022 - 2023
Masters in Mathematical Statistics - Concentration: Statistics, Probability, and Optimization.

Instituto Tecnologico Autonomo de Mexico, CDMX, Mexico　　　　　　2015 - 2020
Bachelor of Science in Applied Mathematics.

Instituto Tecnologico Autonomo de Mexico, CDMX, Mexico　　　　　　2015 - 2020
Bachelor of Arts in Economics - Concentration: Masters in Economic Theory.

Work Experience

PhD Researcher, MIT　　　　　　　　　　　　　　　　　　　　Aug 2023 - Current

- Conducting advanced research in machine learning, statistical and stochastic modeling, and mathematical statistics theory.
- Member of MIT Laboratory for Information and Decision Systems (LIDS), MIT Statistics and Data Science Center (SDSC), and MIT Institute for Data, Systems, and Society (IDSS).
- Extensive experience with Supercloud computing, Python, and Linux environments for hard computational research.

Research Assistant at Harvard and ITAM　　　　　　　　　　　　Mar 2021 - Jan 2023

- Co-authorship of two projects, contributing to statistical analysis and data processing.
- Extensive coding in R and Python, including development of custom packages for statistical analysis.
- Applied many machine learning techniques through Python (e.g., scikit-learn, TensorFlow) and R (e.g., caret, glmnet), along with various statistical methods for modeling and analyze large data sets. Performed text analysis, web-scrapping and work with randomized experiments randomized experiments.

Research Assistant to Fotini Christia (MIT, IDSS Director)　　　　Mar 2021 - Aug 2022

- Led the statistical analysis for an RCT conducted in Egypt to asses gender violence published in Nature Human Behavior. Implemented variable selection, Bayesian methods, power tests, and cross-validation for robust statistical inference.

Graduate Teaching Assistant (ITAM)　　　　　　　　　　　　　Jan 2021 - Dec 2021
Courses: Dynamic Macroeconomics I, Applied Research I, and Economic Research Seminar.

- Delivered lectures on solving dynamic stochastic equations for macroeconomic equilibrium using MATLAB.
- Modeled and predicted financial time series.
- Lectured on applied statistical methods (difference-in-differences, regression discontinuity, and instrumental variables) for research in the social and computational sciences.

Research Assistant (CIE-ITAM)　　　　　　　　　　　　　　　June 2020 - Dec 2020
Supervisor: Ignacio Lobato (ITAM)

- Worked in MATLAB to fit non-invertible time series models to financial data for predictions.

Research Assistant (CIDE - INEGI - ITAM)　　　　　　　　　　June 2019 - Feb 2020
Supervisor: Victor Guerrero (ITAM)

- Collaborated in writing a technical chapter on business cycle methodology and participated in the first international congress of business cycle dating committees from around the world.
- As a result of our work, INEGI formalized the creation of a business cycle dating committee for the Mexican economy in February 2021.

Tutorship Program (ITAM)   Jan 2019 - June 2020
Member of the minor faculty of Statistics

- Answered inquiries and advised on statistics and probability courses to any student.

Selected publications

- Quintero, M., et al. (2024). Common Functional Decompositions Can Mis-attribute Differences in Outcomes Between Populations. To appear in ATTRIB NeurIPS 2024 workshop.
- Bandiera, A., Horacio, L., John, M., Daniela, P., & Manuel, Q. (2024). Can we shield citizens against misinformation through digital literacy training and fact-checks? Working Paper `https://manuelquinteroc.github.io/files/Paper%20Bolivia%202022.pdf`.
- Christia, F., Larreguy, H., Parker-Magyar, E., et al. (2023). Empowering women facing gender-based violence amid COVID-19 through media campaigns. Nature Human Behaviour. `https://doi.org/10.1038/s41562-023-01665-y`.

Technical Skills

Licenses and certifications

Data Science: R Basics by HarvardX (certificate)	June 2019
Data Science: Machine Learning by HarvardX (certificate)	July 2022
High-Dimensional Data Analysis by HarvardX (certificate)	July 2022
Using Python for Research by HarvardX (certificate)	Aug 2022
Python for Data Science and Machine Learning Bootcamp (certificate)	Aug 2022
Neural Networks and Deep Learning by DeepLearning.AI (certificate)	Sept 2022
Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization by DeepLearning.AI (certificate)	Sept 2022

Programming level

R / RStudio	●●●●●
MATLAB	●●●●●
Python	●●●●◐
Stata	●●●●◐
Java	●●●◐○
EViews	●●●◐○
C#	●●●○○

Selected Honors and Awards

- Presidential Graduate Fellowship, MIT (2023-2024)
- FUNED Maestrias Scholarship (Aug 2022).
- Research Award: Honor thesis Applied Mathematics (July 2022).
- Research Award: Honor thesis in Economics (Jun 2022).