José Manuel Cardona Arias

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EDUCATION

The University of Chicago   Chicago, IL
Master of Science in Computational Analysis and Public Policy   June 2026 (Expected)
Coursework: Computer Science, Machine Learning, Databases
Honors: Recipient of a $25,000 Merit-Based Scholarship by University of Chicago, $25,000 Fulbright-García Robles
Scholarship

Center for Research and Teaching of Economics   Aguascalientes, Mexico
Bachelor in Public Policy   June 2018
Coursework: Data Science for Public Policy, Econometrics, Impact Evaluation, Statistics.
Honors: Full Scholarship Recipient covering tuition and fees, monthly Stipend based on academic performance,
Aguascalientes México Youth Award, 2023.

SKILLS

Technical Languages: Python, SQL, R, Stata   Languages: Spanish (Native), English (Advanced)

PROFESSIONAL EXPERIENCE

Innovations for Poverty Action   Washington, D.C.
Senior Data Associate   January 2019 – September 2024
- Developed an [Explainable Boosting Machine model](#) leveraging satellite imagery and proxy means test data to predict household poverty. The model improves poverty rate estimates by reducing mean error by 4 percentage points, enhancing the targeting of anti-poverty interventions in five low-income countries.
- Developed supervised machine learning models using logistic regression and elastic net estimation to improve poverty measurement. Compared to traditional consumption surveys, this tool significantly reduces data collection costs while preserving accuracy. Currently used by organizations in [35+ countries](#).

Research Associate   May 2018 – December 2018
- Oversaw the implementation of an [RCT](#) of a behavioral policy to reduce over-indebtedness levels in Peru.
- Conducted extensive [statistical analyses](#) of administrative datasets on individual debt and credit information. The results allowed financial institutions to implement behavioral programs to decrease over-indebtedness.

Inter American Development Bank   Mexico City, Mexico
Research/Data Associate   September 2023 - September 2024
- Developed a Shiny-based data visualization dashboard that allowed the Ministry of Finance of Mexico City to analyze data on tax compliance, segregated by demographic and socioeconomic characteristics.
- Assisted on the design and implementation of an experimental intervention on tax compliance in Mexico City.

Proyecto de Análisis de Decisiones en Contextos Inciertos, PADeCI   Mexico City,
Mexico
Data Scientist   March 2020 - March 2021
- Analyzed daily data for the [Stanford-CIDE SC-Cosmo model](#) using web scraping tools. Produced detailed reports that supported COVID-19 epidemiological modeling across diverse populations and geographies.
- Produced a shiny-based online [application](#) with visualizations and real-time information on the COVID-19 pandemic as well as projections of the effects of potential strategies to mitigate such pandemic in Mexico.

Drug Policy Program   March 2018 - June 2018
- Standardized and analyzed extensive War on Drugs databases in Mexico. Developed a Python algorithm using fuzzy matching and image recognition to identify similarities between censored datasets, aiding families in the search for missing persons.

Early Childhood Development Centers (CENDI)   Mexico City,
Mexico
Research Coordinator   August 2017 - March
2021
- Oversaw a team of 30 surveyors and 3 field managers in the implementation of a census of the beneficiaries.
- Built a baseline survey, designed a randomization process to select the project´s beneficiaries and assessed the impact evaluation of the program on the cognitive development of 1,500 children.
- Designed an RCT about the impact of parent's involvement on children's academic performance.

TEACHING EXPERIENCE

Elements of Economic Analysis, University of Chicago		Public Economics, CIDE	08/2017 – 12/2017
	09/2024 – 12/2024	Advanced Econometrics, CIDE	01/2020 – 07/2020
Impact Evaluation, CIDE	08/2020 – 12/2020	Advanced Econometrics, CIDE	01/2019 – 07/2019
Public Economics, CIDE	08/2019 – 12/2019		

RESEARCH EXPERIENCE

Poverty rate prediction using multi-modal survey and earth observation data

- Collaborated with Microsoft's AI for Good Lab to develop a machine learning algorithm predicting household poverty using survey data and satellite imagery. Co-authored a paper on the algorithm's application in Ethiopia and presented key findings at the IPA & GPRL Research Methods Gathering at Northwestern University's Kellogg School.

Policy Comparison of Non-Pharmaceutical Interventions and Re-Opening in Mexico City, Mexico: Using a Near-Term Validated Model to Control COVID-19 Epidemic Peaks and Rebounds (Abstract)

Gender Stereotypes in STEM: the LatinAmerican Case, Research Project with IDB