

# Vidal Mendoza Tinoco

Political Scientist -- Coyoacán, Mexico City, Mexico

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## Working Experience

### Data Scientist

Coyoacán, Mexico City

MEXICO'S FEDERAL JUDICIAL POWER ELECTION TRIBUNAL (TEPJF IN SPANISH)

September, 2023 – Today

- In charge of creating a ShinyApp as well as R packages to ease data extraction using SQL queries from the General Agreements Ministry's Information System (SISGA in Spanish), in order to respond to requests for information made through the National Transparency Portal.
- Leader of the team in charge of the creation of Large Language Models (LLM) with Keras and TensorFlow, to automate the classification and thematisation of cases received in the Superior Chamber of the TEPJF. Thus, making the process of challenges and resolutions in the 2024 electoral process more efficient.

### Data Scientist

Morelia, Michoacán

STATE OF MICHOACÁN'S FINANCES MINISTRY – DEPARTMENT HEAD

November 2021 - September 2023

- Based on tax information and using supervised machine learning techniques (lasso and ridge regression), I built a couple of models to predict trends in tax collection (forecasting) as well as estimating tax multipliers (such as fiscal stress). This way, we monitored the state's government's ability to meet its financial obligations, resulting in the restructuring of public debt.
- Debt restructuring saved 540 million Mexican pesos a year, which were invested in several social programs. Public spending was directed to various sectors of the population to comply with the state government's plan using unsupervised machine learning methods (K-means clustering).
- I was in charge of building several databases by extracting text from physical documents. I did this using a supervised machine learning model that classifies the text according to its structure and content.

### Data Analysis Teacher

Morelia, Michoacán

STATE OF MICHOACÁN'S FINANCES MINISTRY – DEPARTMENT HEAD

May 2023 - July 2023

- I designed and taught a data analysis course using R to the staff of the State of Michoacán's Finances Ministry. Introduction to R programming language, manipulating data using Dplyr, data visualization using Ggplot2 and Plotly, are among the topics I taught, in addition to creating reports using RMarkdown.

### Public Policy Consultant

Erongarícuaro, Michoacán (Hybrid)

CITY COUNCIL OF ERONGARÍCUARO, IN THE STATE OF MICHOACÁN – EXTERNAL CONSULTANT

December 2021 - June 2022

- Data collection using surveys and discussion panels in the municipality of Erongarícuaro in the State of Michoacán to identify development issues at municipal level.
- The behavior of several social issues such as violence and the availability of drinking water during the year were estimated using time series regressions that included seasonal dichotomous variables.
- The municipal development plan was created based on the suggested analyses, where public policies are structured to prevent and relieve obstacles for the municipality's social welfare.

### Research Assistant

Álvaro Obregón, Ciudad de México

INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO, ITAM (MEXICAN AUTONOMOUS TECHNOLOGICAL INSTITUTE)

August 2019 - May 2020

- Research assistant in the development of research projects by Dr. Eric Magar (ITAM).
- I created and kept several databases updated using Git and GitHub. Such databases were related to research in the subject of public election. One of them was about the change in electoral preferences in Mexico.

## Schooling

### Instituto Tecnológico Autónomo de México, ITAM (Mexican Autonomous Technological Institute)

Álvaro Obregón, Ciudad de México

BACHELOR'S DEGREE IN POLITICAL SCIENCE

August 2017 - July 2021

- Dissertation: Green Gold Splashes. Effects of the Avocado Boom on Income Inequality in the State of Michoacán.
- Relevant courses: econometrics, causal inference, statistical inference, probability, algebra (including matrix algebra), differential and integral calculus.

### Harris School of Public Policy – University of Chicago

Chicago, Illinois

DATA AND POLICY SUMMER SCHOLAR PROGRAM (DPSS)

Summer 2021

- Final Research Project: Quantitative Analysis of the Protests That Were Causes by the Murder of George Floyd in the United States.
- Relevant Courses: Data analysis for public policies.

# Projects

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## Research - Green Gold Splashes

Remote

INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO, ITAM (MEXICAN AUTONOMOUS TECHNOLOGICAL INSTITUTE) - SUPERVISED

2022-2023

BY DRA. ANTONELLA BANDIERA

- My research is about the way that the shock on the demanding of a product such as avocado affects income inequality in the areas where it is grown. To do this, I used data from formal income in the state of Michoacán to calculate the Gini coefficient per municipality from 2003 to 2020. I compared these data through a difference in difference design (Diff in Diff), using Event Study Models and Two Way Fixed Effects.

# Skills

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## Technical skills

PROGRAMMING LANGUAGES

- R, RMarkdown, Quarto, Python, SQL, Git/GitHub and Latex.

PACKAGES

- Tidyverse, Dplyr, Ggplot2, Plotly, Caret, Pandas, Numpy, Keras and TensorFlow.

## Languages

ENGLISH

- Fluent | IELTS: 7.5

SPANISH

- Native speaker