# POWELL R. SHEAGREN

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## PUBLICATIONS

### Life is more satisfying when evaluated as a whole: A principal component analysis of Mexicans' subjective well-being

Flor Martínez-Sermeño, **Powell Sheagren**, Rafael Garduño-Rivera, Regional Science Policy & Practice, Volume 17, Issue 2, 2025

- Provided a novel use case for Principal Component Analysis on survey data studying well-being across Mexican provinces.
- Achieved a 28.8% variance in our first principal component and got a correlation of .87 when compared to economic metrics.

## WORK EXPERIENCE

### BlueBonnet Data                                                        4/1/2024 – 12/6/2024
*Data Associate on the Programs team*                                                      Austin, Texas

- Analyzed 6 years of program data on 1500 volunteers and 800 clients in R, using Tidyverse and ggplot2 to transform and visualize the data.
- Managed 86 volunteers for 18 different clients, overseeing project reports, holding volunteers to deadlines, and ensuring deliverable quality.
- Launched the AI and Innovation initiative with projects incorporating LLMs, GenAI, Decision Trees, and Dimensionality Reduction.
- Assisted teams in improving voter turnout with VAN and GIS, increasing donor targeting, and building AI and machine learning tools.

### Voter Empowerment Project                                            7/4/2022 –06/29/2023
*Data Manager*                                                                      Washington, DC

- Used statistical tests and visualization packages in Python to derive and communicate insights from the organization's data.
- Raised positive response rates by 20% in a client's phone banking action and improve volunteer targeting by 10% for another.
- Synthesized and documented benchmark metrics for the organization which were used when writing grants and advertising.

## RELEVANT PROJECTS

### Automated Code Documentation with Agentic AI and RAG , Georgetown DSAN                Spring 2025

- Designed a Agentic AI system using LangGraph and Lang Chain to live document data and fix formatting in AWS SageMaker.
- Incorporated Retrieval Augmented Generation to retrieve relevant documentation which was incorporated by the LLM during its tasks.

### Sentiment Analysis by State of Reddit Data, Georgetown DSAN                            Fall 2024

- Programmed a pipeline which analyzed popular sentiments of states using 8 billion rows of reddit data using Spark and SparkNLP in AWS and Azure. This included SQL queries to filter the dataset, applying Natural Language Processing, and visualizing the state level sentiment.

### Election Night Dashboard, Mecklenburg County Democrats                                 Fall 2024

- Constructed an Extract, Transform, Load (ETL) pipeline to API query election data live in under a second.
- Built a Shiny Dashboard which converted the data of the 195 Mecklenburg County precincts into interactive visualization.
- Incorporated data from 2020 and 2022 along with drop down menus to compare results and inform future decisions.

### Price Prediction Based on Images, Georgetown DSAN                                     Spring 2024

- Achieved at 0.23 Root Mean Squared Error in a Convolutional Neural Network predicting price from amazon product images.
- Incorporated visual transformers, dropout, and normalization layers to increase model accuracy.

## EDUCATION AND COURSEWORK

### Georgetown University                                                   August 2023 -  May 2025
*Masters of Science in Data Science and Analytics*                                      Washington, DC
**Coursework**: Neural networks, natural language processing, database systems, cloud/distributed computing, generative AI, data visualization
**Awards and Extracurriculars**: Returning Student Scholarship, Graduate Government Senator, Data Visualization editor for the GPPR

### Swarthmore College                                                     August 2018 -  May 2022
*Bachelor of Arts in Political Science and Mathematics with an Emphasis on Statistics*            Swarthmore, PA
Coursework: Survey design, public opinion research methodology, frequentist and bayesian statistics, public policy, statistical modeling

## KNOWLEDGE, SKILLS, AND ABILITIES

**Hard Skills**: R, Excel, Microsoft Office, Python, Stata, GIS, ArcGIS, Java, SQL, Git, HTML, Tableau, Latex, VAN, AWS, CSS, PostGres
**Packages**: Tensorflow/Keras, Pandas, Pytorch, Numpy, SkLearn, Tidyverse, ggplot, Polars, Arrow, Shiny, Spark, SparkML, SparkNLP, DuckDB
**Soft Skills:** Communication, Teamwork, Project Management, Problem-Solving, Self-Directed Working, Critical Thinking, Attention to Detail