

GustavoVarela-Alvarenga

Statistician

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About me

Statistician with **5 years** of experience with **econometric research** and over **7 years** of experience with quantitative and qualitative **data analysis**. Won an **award** for a paper in which I evaluated the **impact** of a public policy in Brazil. Currently, **PhD candidate in Statistics** and developing a new method for **time series forecasting** (theory, R package and Shiny app). Looking for an internship or part-time job in data science/statistics/research.

Stat Methods

Time-series analysis
Generalized Linear and Mixed models
ANOVA/MANOVA/ANCOVA
Instrumental variable models
Selection models
Matching algorithms
Hypothesis Testing
Monte Carlo simulations
Bootstrap methods
Descriptive statistics
Survey methodology

Analytical Skills

Impact Evaluation
Research
Econometric analysis
Data analysis and management
Critical and model thinking
Problem solving
Qualitative and quantitative analysis
Web scrapping
Data visualization

Experience

- 08/13 - 07/14 **Lead Statistician** [Brazilian Agency for Industrial Development \(ABDI\)](#)
[Think Tank](#)
[Brasilia, Brazil](#)
- Worked with a multidisciplinary team in the development of studies and research papers/whitepapers to assess the impact of public policies towards Brazilian industrial development by gathering data from different sources and surveys, and analyzing it;
 - Presented the results to the Brazilian Minister of Industry.
- 08/12 - 07/14 **Lecturer - Applied Statistics** [Universidade de Brasilia](#)
[University](#)
[Brasilia, Brazil](#)
- Taught applied statistics to undergrad students from areas outside STEM (e.g. social sciences, psychology & others);
 - Found ways to convey complex concepts to a non-technical audience.
- 01/09 - 08/13 **Researcher** [Institute for Applied Economic Research \(IPEA\)](#)
[Think Tank](#)
[Brasilia, Brazil](#)
- Evaluated the impact of public policies towards Industrial Innovation using a wide range of statistical methods and recommended actions for policy improvement based on results of simulations (see section [Publications](#));
 - Handled, processed and analyzed large datasets from multiple sources.

Education

- 08/14 - 05/19 **Ph.D. Candidate in Statistics** [University of Maryland at College Park](#)
(expected)
[Maryland, USA](#)
- Dissertation: A new method for time series forecasting.
Adviser: Dr. Benjamin Kedem
- 08/09 - 12/11 **Master in Economics of the Public Sector** [Universidade de Brasilia, Brazil](#)
[Brasilia, Brazil](#)
- Title of thesis: *Impacts of the Brazilian science and technology sector funds on industrial firms' R&D inputs and outputs: new perspectives using a dose-response function.*
Adviser: Dr. Donald Pianto
- 02/04 - 12/08 **Bachelor of Science in Statistics** [Universidade de Brasilia, Brazil](#)
[Brasilia, Brazil](#)
- Title of monograph: *The Empirical Characteristic Function Applied to Operational Risk Modeling.*
Adviser: Dr. Raul Matsushita

Awards

- 12/2012 **CNI National Economy Award** [2nd Place \(Prêmio CNI de Economia\)](#)
[Pernambuco, Brazil](#)
- Award granted to the paper: "Impacts of the Brazilian science and technology sector funds on industrial firms' R&D inputs and outputs: new perspectives using a dose-response function".
Click [here](#) for the full paper in English and [here](#) for more info about the award.

Software

R - 8 years



Shiny - 1 year



SAS & PROC SQL - 7 years



LaTeX - 6 years



STATA - 3 years



SPSS - 2 years



MATLAB - 2 years



Python - < 1 year



JavaScript - < 1 year



Datasets

Experience with large datasets, including data from household surveys. Had to, efficiently, combine several datasets - with around **50 million lines each** and 15 GB each - by a unique identification number. Used **SQL** procedures in SAS (PROC SQL) for data extraction and manipulation due to the size and complexity of the datasets.

Data Visualization

R packages:

ggplot2

plotly

highcharter

dygraph

googlevis

ggiraph

shiny

Languages

Portuguese - Native



English - Fluent



Selected Publications

Demand for air ticket in economy: a co-integration analysis.

Journal of Transport Literature. Vol. 5, number 3, pp. 64 – 88. April, 2011.

Click [here](#) for the full paper in Portuguese with abstract in English.

Counter-cyclical policies in the automobile industry: a co-integration analysis of the impacts of IPI reduction on vehicle sales

Texto para Discussão No. 1512. Instituto de Pesquisa Econômica Aplicada (IPEA), 2010.

Click [here](#) for the full paper in Portuguese with abstract in English.

For a full list of publications, see my [Google Scholar profile](#).

Short Courses

2018 **Learn Python - Online Course**

[Codecademy](#)

2018 **Introduction To JavaScript - Online Course**

[Codecademy](#)

2012 **Game Theory - Online Course**

[Stanford University](#)

2012 **Model Thinking - Online Course**

[University of Michigan](#)

2012 **Topics in Real Analysis - Summer Course**

[Universidade de Brasília](#)

Other Info

For a complete resume, see my website: www.gustavo.mat.br

For a list of my publicly available Shiny apps, go to: app.gustavo.mat.br

StackExchange

R related answers: [link](#)

Statistical-related answers: [link](#)

Probability-related answers: [link](#)

LinkedIn Profile: [link](#)