

# 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 Skills

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

### 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



### 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.

## 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

## Datasets

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

## Data Viz

Some of the R packages that I have used for **data visualization**:  
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	<b>Learn Python - Online Course</b>	<a href="#">Codecademy</a>
2018	<b>Introduction To JavaScript - Online Course</b>	<a href="#">Codecademy</a>
2012	<b>Game Theory - Online Course</b>	<a href="#">Stanford University</a>
2012	<b>Model Thinking - Online Course</b>	<a href="#">University of Michigan</a>
2012	<b>Topics in Real Analysis - Summer Course</b>	<a href="#">Universidade de Brasília</a>

## Other Info

### StackExchange

R related answers: [link](#)

Statistical-related answers: [link](#)

Probability-related answers: [link](#)

**LinkedIn Profile:** [link](#)