Cao **Bittencourt**

Award-Winning Economist · Statistician

Curitiba, Paraná, Brazil

(+55) 48-99143-4854 | caobittencourt@gmail.com | CaoBittencourt | CaoBittencourt/en

"Ora et Labora." (St. Benedict)

Honors & Awards

First Place **Best Undergraduate Thesis 2021,** Minister Ernane Galvêas Award (R$10,000.00) *EPGE, FGV-RJ*

Experience

Atlas Career Guide

Deerfield Beach, FL, USA (remote job)

Statistician *Apr. 2022 – Current*

- I wrote 17 R packages to standardize my code and facilitate collaboration with the team and deployment in the cloud.
- I automated:
  - Data visualization with ggplot2.
  - Exploratory Factor Analysis (EFA).
  - Dynamic text generation.
- I developed and invented the following products:
  - Career Finder: a psychometric questionnaire that makes precise career recommendations and generates dynamic reports.
  - Career Roadmap: a statistical procedure for optimizing all stages of one's professional journey, from career choice to skill training, while taking into account expected compensation and users' priorities.
  - AI Impact Analysis: a tool that estimates the impact of the advent of Artificial Intelligence on users' professional profiles, on 941 occupations registered by the Bureau of Labor Statistics (BLS), and on the entire US labor market.
  - ACTI: the Atlas Career Type Indicator is my own version of the MBTI (a Jungian typology model) and reveals the user's "career type", which is composed of a combination of up to 14 factors, that I derived from factor analyzing a huge BLS database. In addition, I created a mechanism to visualize "professional types" as chemical molecules.
  - Cognitive Assessment: this cognitive assessment is based on a psychometric method I invented to estimate a user's Intelligence Quotient (IQ) through their professional profile. The results are very close to actual IQ scores, which is relevant in Human Resources and Management, since IQ tests have been banned in American businesses. I've nicknamed my product "NOT IQ", because it provides reliable IQ estimates, even though *technically* it's not an IQ test.
- I invented the following statistical coefficients and procedures:
  - The skewness coefficient for truncated variables.
  - The equivalence coefficient.
  - Various human capital flexibility coefficients: macro and microflexibility (intrafactor, interfactor and aggregate).
  - A series of career similarity coefficients.
  - The career interchangeability coefficient.
  - The coefficient of professional attribute indispensability.
  - The professional profile generality coefficient.
  - The professional competence coefficient.
  - The marginal and aggregate employability coefficients.
  - The marginal and aggregate competitiveness coefficients.
  - The marginal cost of human capital coefficient.
  - The marginal and aggregate time investment coefficients.
  - A factor-analytic comparative statics method.
  - And a general performance coefficient for Factor Analysis models.

Cadarn Consulting

Rio de Janeiro, RJ, BR

Data Analyst Intern *Jul. 2019 – Jan. 2020*

- I analyzed large budgetary databases from Mosaic Fertilizers, identifying their most costly and most profitable internal handling operations.
- I proposed alternative economic indices for contract readjustments, providing multi-million dollar cost reductions.
- I prepared hundreds of charts, in an automated manner, to visualize the cost and profitability of Mosaic Fertilizer's internal handling operations.
- I also produced regional and national maps to locate these same operations, as well as current and potential suppliers of internal handling services.

Authored Programming Packages

V. 3.0.4	**atlas.skew**, "A Skewness Coefficient for Bounded Variables".	*R*
V. 2.1.1	**atlas.acti**, "The Atlas Career Type Indicator".	*R*
V. 2.1.0	**atlas.efa**, "Automated Exploratory Factor Analysis".	*R*
V. 1.2.0	**atlas.eqvl**, "A Multi-Purpose Equivalence Coefficient".	*R*
V. 1.2.0	**atlas.misc**, "Miscellaneous Helper Functions".	*R*
V. 1.1.1	**atlas.ftools**, "Tools for Factor Analysis".	*R*
V. 1.1.0	**atlas.kcoef**, "Statistical Analysis of Human Capital".	*R*
V. 1.0.3	**atlas.plot**, "Automated Plotting in R".	*R*
V. 1.0.2	**atlas.match**, "Quantitative Career Matching".	*R*
V. 1.0.0	**atlas.notiq**, "Accurate IQ Approximations".	*R*
V. 1.0.0	**atlas.fstatics**, "Factor-Analytic Comparative Statics".	*R*
V. 1.0.0	**atlas.intc**, "A Career Interchangeability Coefficient".	*R*
V. 1.0.0	**atlas.employ**, "An Employability Coefficient".	*R*
V. 1.0.0	**atlas.text**, "Dynamic Text Generation".	*R*
V. 0.6.0	**atlas.app**, "Atlas Professional Profile Generator".	*R*
V. 0.2.0	**atlas.kpredict**, "Statistical Prediction of Human Capital".	*R*
V. 0.1.0	**atlas.comp**, "A Competitiveness Coefficient".	*R*

Education

Getulio Vargas Foundation (EPGE, FGV-RJ) *Rio de Janeiro, RJ, BR*

B.S. in Economics *2017 – 2021*

- Thesis: "Equivalence scales in Brazil: the Brazilian cost of living estimated by Engel's and Rothbarth's methods."

Federal University of Santa Catarina (UFSC) *Florianópolis, SC, BR*

B.S. in Psychology (Interrupted) *2014 – 2016*

Skills

Programming	Python, R, Stata, LaTeX, MATLAB, VBA.
DBMS	MySQL, MariaDB.
Cloud	AWS EC2, AWS Lambda, AWS RDS, AWS S3, GitHub.
BI Tools	Power BI (basic), R Shiny.
Web Development	Markdown, HTML (basic), Bubble (basic).
Machine Learning	Supervised and Unsupervised ML algorithms and procedures such as KNN, PCA, SVD, Quadratic Optimization, Linear Programming, Random Forest, K-Means, and Hierarchical Clustering. Also, various regression models, including: OLS, NLS, 2SLS, SUR, BLR, NNLS, BVLS, Beta, Tobit, Probit, and Logistic regressions, Quantile regression, LOESS, GAM, Kernel Smoothing, and so on.
Econometrics	Many statistical models, including AR, MA, ARMA, VAR, Lingering and Current Effects models, as well as assessing Granger Causality in time series data.
Finance	Enterprise valuation, portfolio management, options pricing, cost of living estimation, analysis and construction of household budgets, estimation of household equivalence scales.
Psychometrics	Exploratory Factor Analysis (EFA), evaluation of factors' internal consistency (via Lambda 6, Omega Total, Omega Hierarchical, Lambda 2, Cronbach's Alpha, etc); and a wide range of psychometric testing tools (e.g. Big Five, EPI, MBTI, DISC, Holland Code).
Languages	Portuguese, English, German (elementary).
Office	Word, Excel, PowerPoint, Jira, Trello.
Organization	Scrum, Kanban, XP, Intertemporal Eisenhower matrix, Pomodoro technique.