Cao **Bittencourt**

AWARD-WINNING ECONOMIST · STATISTICIAN

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"Ora et Labora." (St. Benedict)

Honors & Awards

First Place　**Best Undergraduate Thesis 2021**, Minister Ernane Galvêas Award (R$10,000.00)　　　*EPGE, FGV-RJ*
- The evaluating committee said my thesis was: "not only the best, but the best by far."

Authored Programming Packages

3.0.6	**atlas.skew**, "A Skewness Coefficient for Bounded Variables".	*R*
2.1.11	**atlas.acti**, "ACTI: The Atlas Career Type Indicator".	*R*
2.1.2	**atlas.efa**, "Automated Exploratory Factor Analysis".	*R*
2.1.1	**atlas.match**, "Quantitative Career Matching".	*R*
1.2.0	**atlas.eqvl**, "A Multi-Purpose Equivalence Coefficient".	*R*
1.2.0	**atlas.misc**, "Miscellaneous Helper Functions".	*R*
1.1.1	**atlas.ftools**, "Factor Analysis Tools".	*R*
1.1.0	**atlas.class**, "A Bounded Variable Classifier".	*R*
1.1.0	**atlas.kcoef**, "Statistical Analysis of Human Capital".	*R*
1.0.5	**atlas.gene**, "A Career Profile Generality Coefficient".	*R*
1.0.5	**atlas.letters**, "Letter-Shaped Profiles: A Generalization of 'T-Shaped Skills'".	*R*
1.0.4	**atlas.comp**, "A Career Profile Competence Coefficient".	*R*
1.0.3	**atlas.kind**, "A Skill Indispensability Coefficient for Human Capital Analyses".	*R*
1.0.3	**atlas.plot**, "Automated Plotting in R".	*R*
1.0.0	**atlas.employ**, "An Employability Coefficient".	*R*
1.0.0	**atlas.fstatics**, "Factor-Analytic Comparative Statics".	*R*
1.0.0	**atlas.intc**, "A Career Interchangeability Coefficient".	*R*
1.0.0	**atlas.notiq**, "Accurate IQ Approximations".	*R*
1.0.0	**atlas.text**, "Dynamic Text Generation".	*R*
0.2.1	**nbs.data**, "Standardized Financial Statements of Publicly Traded Companies".	*R*
0.1.0	**atlas.evol**, "An Evolutionary Model of Occupations".	*R*

Experience

Atlas Career Guide　　　　　　　　　　　　　　　　　　　　　*Deerfield Beach, FL, US (remote work)*
STATISTICIAN　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Apr. 2022 – Current*
- I wrote 19 R packages to standardize my code and facilitate collaboration with the team and deployment in the cloud.
- I developed and invented the following products:
  - Career Finder: a psychometric questionnaire that makes highly precise career recommendations with dynamic reports.
  - Career Road Map: 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 to estimate the impact of Artificial Intelligence on users' employability, on 873 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) to catalogue "career types" as any combination of 14 factors I empirically derived from factor analyzing a huge BLS database. I also created a mechanism to visualize "ACTI types" as chemical molecules.
  - Cognitive Assessment: this assessment is based on a psychometric method I invented to indirectly estimate a user's Intelligence Quotient via their Atlas professional profile. The results are very close to actual IQ scores, which is relevant for Human Resources and Management, as IQ tests are banned in American businesses. I've nicknamed my product "NOT IQ", because it provides reliable IQ estimates, though technically it's not an IQ test.
  - Letter-Shaped Profiles: a generalization of the psychometric notion of "T-Shaped Skills" – that is, individuals with a solid base of competencies from various domains, as well as high specialization in a particular field of expertise. My version of the model goes beyond the letter "T" in order to summarize skill sets as the shape of any given letter from the Latin, Greek, and Cyrillic alphabets. It also allows for statistical matching and visualization of these "letter-shaped profiles".

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 Fertilizers' 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.

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, Bash, 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, HTML5 (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.

Extracurricular Activity

Stock Market League (Undergraduate Study Group at EPGE, FGV-RJ) *Rio de Janeiro, RJ, BR*

Member *Feb. 2018 – Jul. 2018*
- I've acquired fundamental knowledge of stocks, investment funds and fixed income securities.
- I gave presentations on various asset classes.
- I participated in weekly league planning meetings.