

# Allan Vieira de Castro Quadros

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## EDUCATION

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### University of Brasilia - UnB

1. **B.Sc. in Statistics** 2018  
*Recipient of the “Outstanding Student” Award*  
Senior thesis: “A new method for finding the number of clusters”  
Advisor: André Cançado

### State University of Campinas - Unicamp

2. **M.Sc. in Economic Development** 2012  
Thesis: “Governance structures in the coffee production chain: a case study of the Alta Mogiana’s growers”  
Advisor: Walter Belik
1. **Licenciatura (Full Teaching degree) in Geography** 2008

## INTERESTS

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Financial statistics; Mathematical finance; Stochastic processes; Optimization; Probability; Statistical computing; Time series; Statistical learning; Astrostatistics

## EMPLOYMENT

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### Consulting

Statistics and Data Science Consultant Jul. 2017 - now

### National Fund for Educational Development - FNDE

Educational Financing Specialist May 2013 - now

### RCX Investments

Registered Investment Advisor Jul. 2011 - Jun. 2012  
*accredited by the Brazilian Investment Advisors Association - ANCORD*

### University Center of Jaguariuna - UniFAJ

Lecturer in Economics Jul. 2010 - Apr. 2013

### Brazilian Army - Infantry Branch

First Lieutenant Aug. 2007 - Jun. 2009  
Second Lieutenant Aug. 2004 - Aug. 2007  
Officer Candidate Dec. 2003 - Aug. 2004  
Officer Student Feb. 2003 - Dec. 2003

## SCIENTIFIC PRODUCTION

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### SOFTWARE

3. **mRpostman**: IMAP Toolkit for R. 2019.  
CRAN stable version: <https://cran.r-project.org/package=mRpostman>  
Dev version: <https://github.com/allanvc/mRpostman>  
Package’s official website: <https://allanvc.github.io/mRpostman>

2. **emstreeR**: An R Package for Fast Computing Euclidean Minimum Spanning Trees. 2018.  
CRAN stable version: <https://cran.r-project.org/package=emstreeR>  
Dev version: <https://github.com/allanvc/emstreeR>
1. **FisFa - Fiscaliza Fatura** (*Invoice conformity check*). A Software for Contract Management developed in R and Python. 2016.  
Brazilian Patent: BR 51 2016 000212 3. *FisFa has accounted for over US\$ 50 million in savings for the Brazilian government and received two awards.*

## WORKING PAPERS

Astrostatistics:

Beaklini P., **Quadros A.**, Souza R. S., Avellar M., Dantas M. L., Cançado A. “**Radio Loud and Radio Quiet dichotomy: a multivariate analysis**”. Submitted, Sep. 2019.

## CONFERENCE PAPERS

Applied Statistics:

1. Barreto M., Malheiros T., **Quadros A.** “**Analysis of the environmental sound pressure level in a neonatal intensive care unit**”  
*Portuguese title: Análise do nível de pressão sonora ambiental em uma unidade de terapia intensiva neonatal.*  
34th International Meeting on Audiology (ELA). Foz do Iguaçu-PR, Brazil. May, 2019.

Economics:

2. **Quadros A.**, Silva F. “**An evolutionary approach on the role of technology in agriculture**”  
*Portuguese title: Uma abordagem evolucionista do papel da tecnologia na agricultura.*  
XIX Brazilian Congress on Economics. Bonito-MS, Brazil. September, 2011. *One of the 14 winner articles selected by the referees.*
1. **Quadros A.** “**Strategies on quasi-rent appropriation in the coffee production chain: the case of Alta Mogiana’s growers**”  
*Portuguese title: Estratégias de apropriação de quase-rendas na cadeia produtiva de cafés: o caso dos produtores de cafés especiais da Alta Mogiana.*  
49th Congress of the Brazilian Rural and Economic Sociology Society (SOBER). Belo Horizonte-MG, Brazil. July, 2011.

## TALKS, PRESENTATIONS AND SEMINARS

3. (invited talk) “**Data Science in the Government: successful cases at the National Fund for Educational Development**”.  
*Portuguese title: Ciência de Dados no Governo: casos de sucesso no Fundo Nacional de Desenvolvimento da Educação*  
III Workshop on Information, Data and Technology (WIDaT 2019), Department of Information Science - UnB, Brasília-DF, Brazil. Nov. 2019.  
Slide deck: [https://allanvc.github.io/slide\\_WIDaT2019](https://allanvc.github.io/slide_WIDaT2019)
2. (invited talk) “**Data analysis in the Public Sector**”  
*Portuguese title: Análise de dados no Setor Público.*  
National Fund for Educational Development (FNDE). Brasília-DF, Brazil. July, 2019.  
Slide deck: [https://allanvc.github.io/talk\\_DS\\_FNDE](https://allanvc.github.io/talk_DS_FNDE)

1. (poster) **“Identifying students’ typical academic paths at ICS/UnB”**  
*Portuguese title: Identificação de trajetórias típicas dos estudantes do ICS/UnB.*  
 22th Congress on Undergraduate Research - UnB. Brasilia-DF, Brazil. September, 2017.

## RESEARCH GROUPS AND OTHER PROJECTS

5. **Number of Brazilian students forecasting** Jun. - Jul. 2019  
 Description: Project developed under the Programa Nacional do Livro Didático - PNLD (National Textbook Program), in which I developed a piece of software that uses ARIMA and ETS time series models to forecast the number of students in each grade of every public high school in Brazil for the next couple of years. Approximately, 1 million of models were generated, considering each grade and school, and this information is used to support textbook orders in the whole Brazilian public education system.  
 Technical Coordination: **Allan Quadros**. Number of members: 3.
4. **Malha-Fina FNDE** May 2019 - now  
 Description: Malha-Fina is a data mining project being developed at the National Fund for the Educational Development (FNDE). It uses supervised machine learning to detect fraud in thousands of accountability documents sent to FNDE from more than 5,570 Brazilian municipalities. After implemented, it will save almost one billion of dollars in the first three years of operation and more than twenty five years of continuous human work.  
 General Coordination: Vládimir Araújo; Technical Coordination: **Allan Quadros**. Number of members: 4.
3. **mlpackR** 2018 - now  
 Description: Development of an R package aiming to provide, via RcppMLPACK, all the algorithms available in mlpack (v1.0) - the C++ Machine Learning Library, so R users do not have to deal with the R-Rcpp-C++ integration.  
 Technical Coordination: **Allan Quadros**. Number of members: 3.
2. **Methods and inference on clustering** - University of Brasilia 2017 - now  
 Description: Study and development of new clustering methods and algorithms.  
 Technical Coordination: Prof. André Cançado. Number of members: 5.
1. **Undergraduate students’ risk assessment** - University of Brasilia 2016 - 2017  
 Description: Use of Sequence Analysis, Markov Chain, and Logistic Regression to evaluate the risk of students not graduating on time.  
 Technical Coordination: Prof. Donald Pianto. Number of members: 10.

## OTHER WRITING

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**Quadros, A. “Who is afraid of Math?”** *Portuguese title: Quem tem medo de Matemática?.*  
 A book to help people overcome mathematical anxiety. *In preparation.*

## TEACHING

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| 11. Data Analysis with R - Fast Intermediate Level | Aug. 2019 |
| Instructor, FNDE, 15 hours                         |           |
| 10. Data Analysis with R - Fast Introductory Level | Jul. 2019 |
| Instructor, FNDE, 15 hours                         |           |
| 9. Data Analysis with R - Intermediate Level       | Jul. 2018 |
| Instructor, FNDE, 28 hours                         |           |
| 8. Data Analysis with R - Introductory Level       | Jan. 2018 |
| Instructor, FNDE, 21 hours                         |           |

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| 7. Business Economics  | Fall, 2012            |
| Lecturer, MBA in Financial Management and Accounting, UniFAJ |                       |
| 6. International Trade                                       | Spring and Fall, 2012 |
| Lecturer, UniFAJ   |                       |
| 5. Introduction to Economics                                 | Fall, 2012            |
| Lecturer, UniFAJ   |                       |
| 4. Management and International Trade                        | Spring, 2012          |
| Invited Lecturer, MBA, Mackenzie Presbyterian University     |                       |
| 3. GL600: Market Studies and Marketing                       | Spring, 2011          |
| Teaching Assistant, Unicamp                                  |                       |
| 2. Macroeconomics  | 2010 - 2012           |
| Lecturer, UniFAJ   |                       |
| 1. Microeconomics  | 2010 - 2012           |
| Lecturer, UniFAJ   |                       |

## SCHOLARSHIPS

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| 2. Coordination for the Improvement of the Higher Level Personnel - CAPES | Sep. 2009 - Feb. 2012 |
| 1. Innovation Agency of Unicamp - INOVA                                   | May - Sep. 2009       |

## AWARDS AND RECOGNITION

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| 5. <b>Outstanding Student Award</b>  | Sep. 2018 |
| Honor conceded by the Department of Statistics at UnB to the student with the highest GPA (4.9641/5.0) in the undergraduate program.   |           |
| 4. <b>Standout Project in Contract Management</b>  | Sep. 2018 |
| Awarded to my FisFa Software at the 4th ANGC Awards - Best Initiatives of the Year on Contract Management, National Association of Contract Managers (Associação Nacional dos Gestores de Contratos - ANGC), Brazil.         |           |
| 3. <b>1st Place - Strengthening Internal Controls in Public Administration</b>   | Dec. 2016 |
| Awarded to my FisFa Software at CGU's 4th Good Practices Contest, Ministry of Transparency and Comptroller-General of the Union (Ministério da Transparência e Controladoria Geral da União - CGU), Brazil.                  |           |
| 2. <b>1st Place (of 14) at Army Reserve Officers' Training Corps - Professional Internship</b>   | Jul. 2004 |
| <i>(Estágio de Instrução e Preparação de Oficiais Temporários - EIPOT)</i><br>Officer Candidate with the highest GPA in the State of Sao Paulo in the military professional internship, 2nd Military Region, Brazilian Army. |           |
| 1. <b>2nd Place (of 25) at Army Reserve Officers' Training Corps - Basic Course</b>  | Dec. 2003 |
| <i>(Núcleo de Preparação de Oficiais da Reserva - NPOR)</i><br>Officer Student with the second-highest GPA. NPOR Campinas-SP, Brazilian Army.  |           |