

Marcus A. Nunes

PROFESSOR · DATA SCIENTIST · R EXPERT

☎ +55 84 991771551 | ✉ marcus.nunes@ufrn.br | 🏠 marcusnunes.me | 📷 mnunes | 🌐 marcusanunes

Summary

Assistant Professor at Federal University of Rio Grande do Norte. 10+ years of experience giving lectures on data analysis, statistical consulting, and advising students. I have experience on statistics, data science, machine learning, and R. Interested in teaching data-driven solutions to real-world problems. Director of Statistical Applied Lab - <http://lea.estadistica.ccet.ufrn.br/> - and Vice-Director of Data Science Lab - <http://lacid.ccet.ufrn.br/>.

Work Experience

Federal University of Rio Grande do Norte

Natal, RN, Brazil

ASSISTANT PROFESSOR

Jan. 2015 - Present

- Lecturer on Introduction to Big Data Modelling (400 level course), Introduction to R Language and Statistical Methods (both 300 level courses) and Descriptive Statistics (100 level course) for the Statistics majors.
- Lecturer on Data Science and Statistics for Engineering and Humanities majors.
- Lecturer on Data Science and Machine Learning for Geosciences graduate students.
- Coordinator of Statistical Applied Lab (LEA), the Statistical Consulting Center, for the past 6 years, advising more than 200 students and 10 professors during my tenure.
- Responsible for the Statistical Consulting Center internationalization with cooperation with statistical labs from United States, Nigeria, India, Ghana, South Africa and 10 other developing countries.
- Creator and Vice-Director of the Data Science Lab (LaCiD) since 2023.
- 9 papers published on peer-reviewed journals.
- 3 book chapters published internationally.
- Researched subjects on linguistics, ecology, and applied data science projects.

Federal University of Juiz de Fora

Juiz de Fora, MG, Brazil

ASSISTANT PROFESSOR

Oct. 2013 - Jan. 2015

- Lecturer on Stochastic Processes and Regression Analysis, both 400 level courses, for the Statistics majors.
- Probability lecturer for Engineering majors.
- Researched how climate and DNA influenced ticks infestation on dairy cattle.

Pennsylvania State University

State College, PA, USA

TEACHING ASSISTANT

Aug. 2008 - May 2013

- Gave support to the instructors of the courses Statistical Concepts and Reasoning (100 level course), Elementary Statistics, and Introduction to Biostatistics in the computer labs (200 level courses).
- Responsible to teach the review sessions for the students before their exams.

Education

Pennsylvania State University

State College, PA, USA

PH.D. IN STATISTICS

Aug. 2008 - Jul. 2013

- Thesis entitled "Analysis of Next-Gen Sequencing Data with Excess of Zeros"

Federal University of Rio Grande do Sul

Porto Alegre, RS, Brazil

M.S. IN PURE MATHEMATICS

Mar. 2007 - Jul. 2008

- Thesis entitled "Long-Range Stochastic Processes with Fractional Differencing Parameter Varying in Time"

Federal University of Rio Grande do Sul

Porto Alegre, RS, Brazil

B.SC. IN APPLIED AND COMPUTATIONAL MATHEMATICS

Mar. 2003 - Dec. 2006

R Software and Teaching

Introduction to Big Data Modeling

WEBSITE - [HTTPS://INTROBIGDATA.ORG](https://introbigdata.org)

Nov. 2020 - Today

- Website with all my Introduction to Big Data Modeling college course.
- There are slides, videos, codes and problems using tidyverse and tidymodels principles.

modeloLEA

R PACKAGE - [HTTPS://GITHUB.COM/MNUNES/MODELOLEA](https://github.com/mnunes/modelolea)

Feb. 2018 - Today

- R Markdown LaTeX template for the Applied Statistical Lab.
- All the lab reports have the same look after this package was published.

Personal Blog

WEBSITE - [HTTPS://MARCUSNUNES.ME/POSTS/](https://marcusnunes.me/posts/)

Jan. 2018 - Today

- Blog with statistical applications using mostly R and some python.
- At least one post were published per month in the last 4 and half years.

Shiny Applications

WEBSITE - [HTTP://SHINY.ESTATISTICA.CCET.UFRN.BR/](http://shiny.estadistica.ccet.ufrn.br/)

Nov. 2017 - Today

- Website with shiny applications written by me or my students.
- There are educational and data analysis apps available.

Publications

Using Social Media and Network Services to Promote Statistical Collaboration

Laboratories: A Case Study of LEA Brazil

SUSTAINABLE STATISTICAL AND DATA SCIENCE METHODS AND PRACTICES

2024

- Case study on how we used social media after the pandemic to increase our statistical consulting lab reach.
- https://doi.org/10.1007/978-3-031-41352-0_1

Retail sales forecasting for a Brazilian supermarket chain: an empirical assessment

v. 01

2022 IEEE 24TH CONFERENCE ON BUSINESS INFORMATICS (CBI)

2022

- Sales forecast and feature engineering on a supermarket chain sales data.
- <https://doi.org/10.1109/CBI54897.2022.00014>

Modernizing the Curricula of Statistics Courses through Statistical Learning

PROMOTING STATISTICAL PRACTICE AND COLLABORATION IN DEVELOPING COUNTRIES

2022

- A proposal to update statistical curriculums to make use of the available computational power and free datasets.
- <https://doi.org/10.1201/9781003261148>

Data Centred Intelligent Geosciences: Research Agenda and Opportunities Position

Paper

SERVICE-ORIENTED COMPUTING – ICSOC 2021 WORKSHOPS

2022

- Ideas on how to use recent developments on machine learning to better understand and model geoscience data.
- https://doi.org/10.1007/978-3-031-14135-5_20

XGBoost na Previsão da Geração de Energia Elétrica em Parques Eólicos

ANAIS DA XIV CONFERÊNCIA BRASILEIRA SOBRE QUALIDADE DA ENERGIA ELÉTRICA

2020

- This work applies XGBoost to forecast wind power electricity generation.
- <https://10.17648/cbqee-2021-130586>

Uma comparação entre ANOVA e modelos lineares mistos para análise de dados de tempo de resposta

v. 19 n. 1

REVISTA DA ÁBRALIN

2020

- This paper uses monte carlo simulation to show how Linear Mixed Models lead to smaller type I errors than their ANOVA counterpart.
- <https://10.25189/rabralin.v19i1.1388>

Declining fisheries and increasing prices: The economic cost of tropical rivers impoundment

v. 221

FISHERIES RESEARCH

2020

- We show how a dam built on Madeira River, in Brazil, influenced on fisheries management.
- <https://doi.org/10.1016/j.fishres.2019.105399>

O papel do conhecimento de eventos no processamento de sentenças isoladas

v. 10

LETRÔNICA

2017

- We investigate the role of event knowledge in language processing.
- <https://doi.org/10.15448/1984-4301.2017.2.26408>

Incorporation and Remodeling of Bone Block Allografts in the Maxillary Reconstruction: A Randomized Clinical Trial

vol. 19(1)

CLINICAL IMPLANT DENTISTRY AND RELATED RESEARCH

2016

- This paper shows that there is a significant difference regarding the resorption of the bone grafts when waiting 4 or 6 months before placing the implants.
- <https://doi.org/10.1111/cid.12441>

Fresh-Frozen Bone Allografts in Maxillary Alveolar Augmentation: Analysis of Complications, Adverse Outcomes, and Implant Survival

vol. 87(11)

JOURNAL OF PERIODONTOLOGY

2016

- We show that infection and suture dehiscence are significantly correlated with graft loss in a maxillary augmentation.
- <https://doi.org/10.1902/jop.2016.160155>

Long memory analysis in DNA sequences

vol. 361(2)

PHYSICA A: STATISTICAL MECHANICS AND ITS APPLICATIONS

2006

- We built empirical confidence intervals for the differentiation parameter in long-range time series.
- <https://doi.org/10.1016/j.physa.2005.06.099>

Geometria Dinâmica e a Lei dos Cossenos

vol. 52

REVISTA DO PROFESSOR DE MATEMÁTICA

2003

- This paper serves as an inspiration to high school teachers on how to use a computer software to teach the cosine law.

Honors & Awards

2016-23	Scientific Outreach Grant , Federal University of Rio Grande do Norte	<i>Natal, RN, Brazil</i>
2022	Travel Grant to Kumasi, Ghana , University of Colorado Boulder	<i>Boulder, CO, US</i>
2019	Research Grant , USAID	<i>Washington, DC, US</i>
2019	Travel Grant to Kuala Lumpur, Malaysia , University of Colorado Boulder	<i>Boulder, CO, US</i>
2017	Research Grant , Federal University of Rio Grande do Norte	<i>Natal, RN, Brazil</i>
2008	Fulbright Scholarship , Fulbright Program	<i>Brasília, DF, Brazil</i>