

Pedro Miguel Teles da Fonseca

Curriculum Vitæ

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EDUCATION

2017 - PhD in Applied Mathematics for Economics and Management

ISEG Lisbon School of Economics and Management

Research center: CEMAPRE - Center for Applied Mathematics and Economics

Research topic: Bayesian model selection and hypothesis testing

2016 – 2018 | Postgraduate Degree in Statistical Systems

NOVA Information Management School Specialization: Central Banks' Statistics Program fully taught in English

2014 – 2016 | Master's Degree in Applied Econometrics and Forecasting

ISEG Lisbon School of Economics and Management

Thesis: Digit Analysis Using Benford's Law, a Bayesian Approach

One course taught in English

2010 – 2014 | Bachelor's Degree in Economics

ISEG Lisbon School of Economics and Management

Five courses taught in English

EXPERIENCE

2020 – ISEG Lisbon School of Economics and Management

Assistant Professor

Currently teaching the following undergraduate courses:

- Statistics I (probability theory, random variables, probability distributions, sampling distributions)
- Statistics II (estimation, hypothesis testing, non-parametric methods, linear regression)

2017 – 2020 | FCT - Foundation for Science and Technology

Research fellow

Conducted research as part of my PhD program. Research field: Bayesian model selection and hypothesis testing. Worked on applications that included fraud detection and bibliometrics.

2016 – 2017 | **Bank of Portugal**

6 months traineeship, Department of Statistics

Compilation of official statistics from the securitization entities operating in Portugal and from the national financial accounts, for dissemination and reporting purposes. Automation of processes regarding the generation and update of the lists of entities from the Portuguese non-monetary financial sector to be considered in the production of official statistics, using VBA, SQL and SAS programming.

2015 BANIF - Banco Internacional do Funchal

6 months internship, Department of Transformation and Systems

Modelling and extraction of information from BANIF's Data Wharehouse, using SAS Enterprise Guide and SQL programming, and integration with information from other internal sources. Data analysis and data quality management. Exploratory analysis of data from BANIF's help desk. Participation in the AnaCredit project, which consists in the implementation of a detailed database of individual bank loans in the euro area, harmonized across all member states.

2013 | UECE - Research Unit on Complexity and Economics Research fellow

Project motivated by the 2012 Nobel prize in economics, awarded to Alvin Roth and Lloyd Shapley for their theory of stable allocation in two sided matching markets, also known as the stable marriage problem. I integrated a team which investigated the adequacy of the matching algorithms used in some Portuguese two sided matching markets, such as the ones used by governmental agencies to assign students to public schools.

AWARDS AND DISTINCTIONS

2016 | Best master's degree final project

Highest grade in a final project in the Master's in Applied Econometrics and Forecasting since 2013

2014 Best student in the statistics II course

Highest grade among 155 undergraduate students

Publications

Articles

2019 Carneiro, Inês, Rita Ramos, Pedro Fonseca, Teresa Martins, Filomena Pereira and Manuela Braga (2019). Time to diagnosis of pediatric oncologic disease: ten-year experience from level II hospital.

Nascer e Crescer - Birth and Growth Medical Journal 28(4), 179 – 184.

2019 Carneiro, Inês, Pedro Fonseca and Rosário Ferreira, (2019). Children's Sleep Habits Questionnaire in Two Subpopulations from Cape Verde and Mozambique: Exploratory and Regression Analysis. *Acta Médica Portuquesa* **32**(10), 628 – 634.

Conference Proceedings

2017 Carneiro, Inês, Pedro Fonseca, and Rosário Ferreira (2017). Sleep habits and sleep disturbances in a pediatric population of Cabo Verde. Sleep Medicine 40(Suppl 1), e210 – e211.

Open-Source Software

Fonseca, Pedro (2020). inspector: Validation of Arguments and Objects in User-Defined Functions. R package available for download on CRAN. Official website: ptfonseca.github.io/inspector.

Fonseca, Pedro and Rui Paulo (2020). pcal: Calibration of P-values for Point Null Hypothesis Testing. R package available for download on CRAN. Official website: https://ptfonseca.github.io/pcal.

COMMUNICATIONS

Workshops Lectured

2020 | Introduction to R Programming

12 hours of online workshops. Organization: YES - Young Economics Society

2020 Intermediate R Programming

4 hours of online workshops. Organization: YES - Young Economics Society

Poster Presentations

2019 | Bayesian Digit Analysis

O'Bayes 2019 – Objective Bayes Methodology Conference

University of Warwick, UK

2019 Asthma, Allergic Rhinitis and Sleep Quality in a Pediatric Population from Mozambique

XXV Jornadas de Pediatria

Santa Maria Hospital, Lisbon, Portugal

2017 Sleep Habits and Sleep Disturbances in a Pediatric Population of Cape Verde

World Sleep Congress 2017

Prague, Czech Republic

FUNDING AND SCHOLARSHIPS

2019 O'Bayes 2019 travel grant

Travel grant to attend and present a poster at O'Bayes 2019 – Objective Bayes methodology conference (Warwick - UK)

Funding institution: University of Warwick

2019 **O'Bayes 2019** funding

Financial support to attend and present a poster at O'Bayes 2019 – Objective Bayes methodology conference (Warwick - UK)

Funding institution: CEMAPRE - Center for Applied Mathematics and Economics

2017 PhD scholarship

Full tuition funding + monthly stipend and supplementary support. Duration: Up to 4 years

Funding institution: Foundation for Science and Technology

2016 Funding for postgraduate degree in Statistical Systems

Full tuition + fees

Funding institution: Bank of Portugal

2012 Research fellowship

Monthly stipend. Duration: Six months UTL/Santander Totta Scientific Awards

Scientific field: Game Theory. Topic: Two-sided matching markets in Portugal

Technical University of Lisbon

Host Institution: UECE - Research Unit on Complexity and Economics

Complementary Education

Summer School

| 2018 | Laboratory | of E | xperimental | Economics |
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ISEG Lisbon School of Economics and Management

2017 Introduction to Python with applications to Artificial Intelligence

NOVA Information Management School

2016 | Computational Bayesian Statistics

Faculty of Sciences of the University of Lisbon

2014 | **MATLAB**

ISEG Lisbon School of Economics and Management

2013 | Banking & the Financial Crisis

Nyenrode Business University, Breukelen - Netherlands

Extracurricular Course Units

2018 | Big Data

Course from the MSc in Applied Econometrics and Forecasting

ISEG Lisbon School of Economics and Management

2016 | Computation

Course from the MSc in Quantitative Methods for Decision-making in Economics and Business ISEG Lisbon School of Economics and Management

Online Courses

| 2010 | Intro to | COL | for- | Data | Caiamaa |
|------|----------|-----|------|------|---------|
| 2018 | intro to | SUL | m | Data | Science |

Datacamp

2018 Introduction to Shell for Data Science

Datacamp

2017 Querying with Transact-SQL

Microsoft course, attended through edX

| 2017 | Introduction to Python for Data Science Microsoft course, attended through edX |
|------|------------------------------------------------------------------------------------------------|
| 2017 | Programming with R for Data Science Microsoft course, attended through edX |
| 2017 | Introduction to R for Data Science Microsoft course, attended through edX |
| 2013 | Markets with Frictions University of Wisconsin-Madison Online, attended through Coursera |
| 2013 | Introduction to Mathematical Thinking Stanford University Online, attended through Coursera |
| 2013 | Game Theory Stanford University Online, attended through Coursera |

Language Courses

2005 | First Certificate in English

British Council

COMMUNITY INVOLVEMENT

Peer-Reviewer

Since 2019 Acta Médica Portuguesa, the scientific journal of the Portuguese Medical Association (Ordem dos Médicos)

Non-Profit Associations

Since 2018 | Data-Hub

Co-Founder and Instructor

Data Hub is a Data Science club founded by PhD and MSc students with the mission of raising awareness to the importance of Data Science amongst economics and business students and promoting knowledge and expertise sharing through meetings and workshops in order to provide students with the tools they need to turn data into knowledge and succeed in analytics-oriented tasks.

2010 – 2011 | AEISEG - ISEG Student's Union

Department of Marketing

Workshops

Organized

2018 **LaTeX Typesetting Language, an Introductory Tutorial**, ISEG Lisbon School of Economics and Management

2018 | MATLAB, an Introductory Tutorial, ISEG Lisbon School of Economics and Management

Attended

2020 Intro to Machine Learning with Tidymodels, 4 hours of workshop, R/Medicine 2020 pre-conference workshop lectured by Alison Hill (Rstudio)

2018 Tidyverse & Shiny: From data manipulation to the interactive presentation of results in interactive apps, 10 hours of workshop, Alambra Consulting

Conferences Attended

| 2020 | DSPA Insights Week 2020, Virtual conference hosted by DSPA |
|------|-----------------------------------------------------------------------------------------------------------------|
| 2020 | R/Medicine, Virtual conference hosted by the R consortium |
| 2019 | O'Bayes 2019 - Objective Bayes Methodology Conference, University of Warwick, UK |
| 2018 | Data Science for Hospitality and Tourism, Rectorate of the Nova University of Lisbon |
| 2018 | Insights 2018 – Data Science and Artificial Intelligence Conference, Rectorate of the Nova University of Lisbon |

SEMINARS ATTENDED

| 2018 | Writing for Publication in Top Journals: Tips and Insights, NOVA Information Management School |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 2018 | Road to Success: a guide for doctoral students and junior faculty members in the behavioral and social sciences, NOVA Information Management School |
| 2016 | The Future of Official Statistics: Potentials and Challenges, Rectorate of the Nova University of Lisbon |

COMPUTER SKILLS

| Programming | R, SQL, Bash, SAS, VBA, Wolfram, JAGS, Stan, Python, Git and GitHub |
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| Markup | Markdown, R Markdown, LaTeX, Beamer, HTML and CSS |
| Software | R Studio, Excel, Word, Power Point, Teams, Zoom, Math Type, Solver, Eviews, Stata, MATLAB, Base SAS, SAS Enterprise Guide, SAS Enterprise Miner, SAS Studio, SQL Server, Wolfram Mathematica, VirtualBox and Visual Studio Code |
| Operating Systems | MacOS, Ubuntu and Windows |