



# Pedro Miguel Teles da Fonseca

## *Curriculum Vitae*

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## EDUCATION

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| 2017 –      | <b>PhD in Applied Mathematics for Economics and Management</b><br>ISEG Lisbon School of Economics and Management<br>Research center: CEMAPRE – Center for Applied Mathematics and Economics<br>Research topic: Bayesian model selection and hypothesis testing |
| 2016 – 2018 | <b>Postgraduate Degree in Statistical Systems</b><br>NOVA Information Management School<br>Specialization: Central Banks' Statistics<br>Program fully taught in English  |
| 2014 – 2016 | <b>Master's Degree in Applied Econometrics and Forecasting</b><br>ISEG Lisbon School of Economics and Management<br>Thesis: Digit Analysis Using Benford's Law, a Bayesian Approach<br>One course taught in English  |
| 2010 – 2014 | <b>Bachelor's Degree in Economics</b><br>ISEG Lisbon School of Economics and Management<br>Five courses taught in English  |

## EXPERIENCE

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| 2020 –      | <b>ISEG Lisbon School of Economics and Management</b><br><b>Visiting Assistant Professor, Department of Mathematics</b><br>Currently teaching the following undergraduate courses:<br>- Statistics I (probability theory, random variables, probability distributions, sampling distributions)<br>- Statistics II (estimation, hypothesis testing, non-parametric methods, linear regression, forecasting)  |
| 2017 – 2020 | <b>FCT - Foundation for Science and Technology</b><br><b>Research Fellow</b><br>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 | <b>Bank of Portugal</b><br><b>6 months traineeship, Department of Statistics</b><br>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        | <b>BANIF - Banco Internacional do Funchal</b><br><b>6 months internship, Department of Transformation and Systems</b><br>Modelling and extraction of information from BANIF's Data Warehouse, 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. |

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| 2013 | <b>UECE - Research Unit on Complexity and Economics Research Fellow</b><br>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. |
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## AWARDS AND DISTINCTIONS

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| 2016 | <b>Best master's degree final project</b><br>Highest grade in a final project in the Master's in Applied Econometrics and Forecasting since 2013 |
| 2014 | <b>Best student in the Statistics II course</b><br>Highest grade among 155 undergraduate students  |

## PUBLICATIONS

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### Articles

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| 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. <i>Nascer e Crescer - Birth and Growth Medical Journal</i> <b>28</b> (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. <i>Acta Médica Portuguesa</i> <b>32</b> (10), 628 – 634.                                    |

### Conference Proceedings

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| 2017 | Carneiro, Inês, Pedro Fonseca, and Rosário Ferreira (2017). Sleep habits and sleep disturbances in a pediatric population of Cabo Verde. <i>Sleep Medicine</i> <b>40</b> (Suppl 1), e210 – e211. |
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### Open-Source Software

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| 2020 | Fonseca, Pedro (2020). <i>inspector</i> : Validation of Arguments and Objects in User-Defined Functions. R package available for download on CRAN. Official website: <a href="https://ptfonseca.github.io/inspector">ptfonseca.github.io/inspector</a> .    |
| 2020 | Fonseca, Pedro and Rui Paulo (2020). <i>pcal</i> : Calibration of P-values for Point Null Hypothesis Testing. R package available for download on CRAN. Official website: <a href="https://ptfonseca.github.io/pcal">https://ptfonseca.github.io/pcal</a> . |

## COMMUNICATIONS

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### Workshops Lectured

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| 2020 | <b>Introduction to R Programming</b><br>12 hours of online workshops. Organization: YES - Young Economics Society |
| 2020 | <b>Intermediate R Programming</b><br>4 hours of online workshops. Organization: YES - Young Economics Society     |

### Poster Presentations

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| 2019 | <b>Bayesian Digit Analysis</b><br>O'Bayes 2019 – Objective Bayes Methodology Conference<br>University of Warwick, UK  |
| 2019 | <b>Asthma, Allergic Rhinitis and Sleep Quality in a Pediatric Population from Mozambique</b><br>XXV Jornadas de Pediatria<br>Santa Maria Hospital, Lisbon, Portugal |
| 2017 | <b>Sleep Habits and Sleep Disturbances in a Pediatric Population of Cape Verde</b><br>World Sleep Congress 2017<br>Prague, Czech Republic                           |

## COMPLEMENTARY EDUCATION

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### Summer School

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| 2018 | <b>Laboratory of Experimental Economics</b><br>ISEG Lisbon School of Economics and Management                    |
| 2017 | <b>Introduction to Python with applications to Artificial Intelligence</b><br>NOVA Information Management School |
| 2016 | <b>Computational Bayesian Statistics</b><br>Faculty of Sciences of the University of Lisbon                      |
| 2014 | <b>MATLAB</b><br>ISEG Lisbon School of Economics and Management  |
| 2013 | <b>Banking &amp; the Financial Crisis</b><br>Nyenrode Business University, Breukelen - Netherlands               |

### Extracurricular Courses

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| 2018 | <b>Big Data</b><br>Course from the MSc in Applied Econometrics and Forecasting<br>ISEG Lisbon School of Economics and Management                                  |
| 2016 | <b>Computation</b><br>Course from the MSc in Quantitative Methods for Decision-making in Economics and Business<br>ISEG Lisbon School of Economics and Management |

### Online Courses

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| 2018 | <b>Intro to SQL for Data Science</b><br>Datacamp  |
| 2018 | <b>Introduction to Shell for Data Science</b><br>Datacamp   |
| 2017 | <b>Querying with Transact-SQL</b><br>Microsoft course, attended through edX                           |
| 2017 | <b>Introduction to Python for Data Science</b><br>Microsoft course, attended through edX              |
| 2017 | <b>Programming with R for Data Science</b><br>Microsoft course, attended through edX                  |
| 2017 | <b>Introduction to R for Data Science</b><br>Microsoft course, attended through edX                   |
| 2013 | <b>Markets with Frictions</b><br>University of Wisconsin-Madison Online, attended through Coursera    |
| 2013 | <b>Introduction to Mathematical Thinking</b><br>Stanford University Online, attended through Coursera |
| 2013 | <b>Game Theory</b><br>Stanford University Online, attended through Coursera                           |

### Language Courses

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| 2005 | <b>First Certificate in English</b><br>British Council |
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## FUNDING AND SCHOLARSHIPS

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| 2019 | <b>O'Bayes 2019 travel grant</b><br>Travel grant to attend and present a poster at O'Bayes 2019 – Objective Bayes methodology conference (Warwick - UK)<br>Funding institution: University of Warwick |
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|------|--|
| 2019 | <b>O'Bayes 2019 funding</b><br>Financial support to attend and present a poster at O'Bayes 2019 – Objective Bayes methodology conference (Warwick - UK)<br>Funding institution: CEMAPRE - Center for Applied Mathematics and Economics   |
| 2017 | <b>PhD scholarship</b><br>Full tuition funding + monthly stipend and supplementary support. Duration: Up to 4 years<br>Funding institution: Foundation for Science and Technology  |
| 2016 | <b>Funding for postgraduate degree in Statistical Systems</b><br>Full tuition + fees<br>Funding institution: Bank of Portugal  |
| 2012 | <b>Research fellowship</b><br>Monthly stipend. Duration: Six months<br>UTL/Santander Totta Scientific Awards<br>Scientific field: Game Theory. Topic: Two-sided matching markets in Portugal<br>Technical University of Lisbon<br>Host Institution: UECE - Research Unit on Complexity and Economics |

## WORKSHOPS

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### Organized

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| 2018 | <b>LaTeX Typesetting Language, an Introductory Tutorial</b> , ISEG Lisbon School of Economics and Management |
| 2018 | <b>MATLAB, an Introductory Tutorial</b> , ISEG Lisbon School of Economics and Management                     |

### Attended

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| 2020 | <b>Intro to Machine Learning with Tidymodels</b> , 4 hours of workshop, R/Medicine 2020 pre-conference workshop lectured by Alison Hill (Rstudio)              |
| 2018 | <b>Tidyverse &amp; Shiny: From data manipulation to the interactive presentation of results in interactive apps</b> , 10 hours of workshop, Alambra Consulting |

## CONFERENCES ATTENDED

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| 2021 | <b>R/Medicine 2021</b> , Virtual conference hosted by the R consortium  |
| 2020 | <b>DSPA Insights Week 2020</b> , Virtual conference hosted by DSPA  |
| 2020 | <b>R/Medicine 2020</b> , Virtual conference hosted by the R consortium  |
| 2019 | <b>O'Bayes 2019 - Objective Bayes Methodology Conference</b> , University of Warwick, UK                                |
| 2018 | <b>Data Science for Hospitality and Tourism</b> , Rectorate of the Nova University of Lisbon                            |
| 2018 | <b>Insights 2018 – Data Science and Artificial Intelligence Conference</b> , Rectorate of the Nova University of Lisbon |

## SEMINARS ATTENDED

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

## COMMUNITY INVOLVEMENT

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## Peer-Reviewer

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| Since 2019 | <b>Acta Médica Portuguesa</b> , the scientific journal of the Portuguese Medical Association ( <i>Ordem dos Médicos</i> ) |
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## Non-Profit Associations

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| Since 2018  | <b>Data-Hub</b><br>Co-Founder and Instructor<br>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 | <b>AEISEG - ISEG Student's Union</b><br>Department of Marketing   |

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## COMPUTER SKILLS

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| <b>Programming</b>       | R, SQL, Bash, SAS, VBA, Wolfram, JAGS, Stan, Python, Git and GitHub   |
| <b>Markup</b>            | Markdown, R Markdown, LaTeX, Beamer, HTML and CSS   |
| <b>Software</b>          | 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 |
| <b>Operating Systems</b> | MacOS, Ubuntu and Windows   |