

# BRUNA WUNDERVALD

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## SUMMARY

I am a statistician, reproducible research enthusiast, R and git lover and active user. I like statistical modelling in general, package and dashboards development, text mining and APIs. I am specially interested in Bayesian inference, multivariate analysis, feature extraction and probabilistic graphical models.

Currently, I am pursuing my PhD at the Hamilton Institute in Maynooth, Ireland. I am part of Andrew Parnell's research group, and our work is mostly related to the development of new Bayesian methods for machine learning and its many possible applications.

## EXPERIENCE

### Graduate Teaching Assistant

#### Maynooth University

2019

Maynooth, Ireland

- Lab conducting, student support and paper grading for MSc students.

### Statistician

#### Priced

2018

São Paulo, São Paulo, Brazil

- Analysis of expenditure data in Brazil: data wrangling, product elasticity and churn, consumers clusterization and general behaviour.

### Statistics Intern

#### City Hall of Pinhais

2017

Pinhais, Paraná, Brazil

- Geostatistical data analysis on the financial data of the people living in Pinhais City.

### Statistics Intern

#### Bradesco Bank

2016-2017

Curitiba, Paraná, Brazil

- Credit risk modelling with logistic regression.

## STRENGTHS

Bayesian Methods

Multivariate Statistics

Variational Inference

MIR

Machine Learning

NLP

R

tidyverse

python

julia

c++

Shiny

JAGS & Stan

git

GitHub

HTML

CSS

L<sup>A</sup>T<sub>E</sub>X

## EDUCATION

### Ph.D. candidate in Statistics

#### Maynooth University

Sept 2018 - \*

Thesis theme: Extensions to Bayesian Tree-Based Models

### Honours Bachelor degree in Statistics

#### Federal University of Paraná

April 2013 - August 2018

Thesis theme: Machine learning and chord based feature engineering for genre prediction in popular Brazilian music

## PROJECTS



#### R-Ladies Organizer

São Paulo, Curitiba and Dublin,  
<https://rladies.org/>



#### R-Music Blog

<https://r-music.rbind.io/>



#### Non-Linear Models Catalog

<https://github.com/leg-ufpr/nlmSet>

## LANGUAGES

English



Portuguese



French



Spanish



Italian



Dutch



Russian



## REVIEWER

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- **rOpenSci** - R Packages Reviewer. 2018 - Current.
- **TEMA: Trends in Applied and Computational Mathematics** - Journal Articles Reviewer. 2019 - Current.
- **ISMIR 2020** - Conference Reviewer. 2020 - Current.

## PUBLICATIONS

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### Books

- P. E. UFPR, *Git manual, project of tutorial extension in statistics*. 2016.

### Articles

- B. D. Wundervald and W. M. Zeviani, "Machine learning and chord based feature engineering for genre prediction in popular Brazilian music," Feb. 2019. arXiv: [1902.03283](https://arxiv.org/abs/1902.03283). [Online]. Available: <http://arxiv.org/abs/1902.03283>.

### Software

- **vagalumer: Access to the 'vagalume' api** - Author, [Online] Available: <https://CRAN.R-project.org/package=vagalumer>
- **chorrrds: Music chords extraction** - Author, [Online] Available: <https://CRAN.R-project.org/package=chorrrds>
- **broom: Convert Statistical Analysis Objects into Tidy Tibbles** - Contributor, [Online] Available: <https://github.com/tidymodels/broom>
- **distributions3: Probability Distributions as S3 Objects** - Contributor, [Online] Available: <https://github.com/alexpgayes/distributions3>
- **ranger: A Fast Implementation of Random Forests** - Contributor, [Online] Available: <https://github.com/imbs-hl/ranger>

### Miscellaneous

- B. Wundervald, F. Lima, and S. Ferrari, *Distributions on the unit interval catalog*, Shiny Application, 2018. [Online]. Available: <https://brunaw.shinyapps.io/dissertacao-francimario/>.
- B. Wundervald and W. Zeviani, *Non-linear models catalog*, Shiny Application, 2017. [Online]. Available: <https://github.com/brunaw/catreg>.
- B. Wundervald, *R-music: Introduction to the vagalumer package*, 2018. [Online]. Available: <https://r-music.rbind.io/posts/2018-11-22-introduction-to-the-vagalumer-package/>.
- B. Wundervald and J. Trecenti, *R-music: Introduction to the chorrrds package*, 2018. [Online]. Available: <https://r-music.rbind.io/posts/2018-08-19-chords-analysis-with-the-chorrrds-package/>.
- B. Wundervald and T. M. Dantas, *R-music: Rspotify*, 2018. [Online]. Available: <https://r-music.rbind.io/posts/2018-10-01-rspotify/>.
- B. Wundervald and J. Trecenti, *R-music: Music21*, 2018. [Online]. Available: <https://r-music.rbind.io/2018-10-06-music21>.
- B. Wundervald, *R-music: Connecting packages*, 2019. [Online]. Available: <https://r-music.rbind.io/posts/2019-03-13-connecting-packages/>.

## TEACHING EXPERIENCE

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| 2019/2020 | Topics in Data Analytics, Tutoring instructor, <i>Maynooth University</i> , 2nd Term.                              |
| 2019/2020 | R for Data Analytics, Tutoring instructor, <i>Maynooth University</i> , 1st Term.                                  |
| 2019/2020 | Statistical Methods for Data Science, Tutoring instructor, <i>Maynooth University</i> , 1st Term.                  |
| 2019      | Music Data Analysis in R, Shortcourse instructor, <i>IV International Seminar on Statistics with R</i> , May 2019. |
| 2019      | Building R packages Workshop, Workshop teaching assistant, <i>University College Dublin</i> , April 2019.          |
| 2019      | Deep Learning for Statisticians, Shortcourse instructor, <i>XVI School of Regression Models</i> , March 2019.      |
| 2019      | Statistical Machine Learning, Tutoring instructor, <i>Maynooth University</i> , 1st Term.                          |
| 2018      | Linear Models 2, Tutoring instructor, <i>Maynooth University</i> , 2nd Term.                                       |
| 2017      | R Markdown, Shortcourse instructor, <i>Federal University of Paraná</i> September 2017.                            |

## ACADEMIC RELATED WORK

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| 2019/2020 | Students Seminar Series, Chair & Organizer, Hamilton Institute, <i>Maynooth University</i> |
| 2019      | satRdays São Paulo, Scientific Committee & Organizer, São Paulo, São Paulo, Brazil.        |
| 2019      | PyCon Ireland 2019, Session Chair, Dublin, Ireland.  |

## ORAL COMMUNICATIONS

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- 2019 Probabilistic Graphical Models in R and python  
*IV International Seminar on Statistics with R*,  
Niterói, Brazil, May 2019.
- 2019 Regularization Methods in Random Forests  
*39th Conference on Applied Statistics in Ireland*,  
Dundalk, Ireland, May 2019.
- 2019 Chord Based Feature Extraction for Genre  
Classification in Popular Brazilian Music,  
*XVI School of Regression Models*,  
Pirenópolis, Brazil, March 2019.
- 2018 Construction and Implementation of Multivariate  
Dispersion Models,  
*63rd meeting of the Brazilian Region of the IBS*  
Curitiba, Brazil, May 2018.
- 2018 Music Data Analysis with R,  
*R Day - First national meeting of R users*  
*Federal University of Paraná*  
Curitiba, Brazil, May 2018.
- 2016 Non-Linear Models Catalog,  
*Integrated Week of Teaching, Research and Extension*,  
*Federal University of Paraná*  
Curitiba, Brazil, 2016.
- 2015 Results of the Applied Statistical Analysis Laboratory,  
*Integrated Week of Teaching, Research and Extension*,  
*Federal University of Paraná, Curitiba, Brazil*, 2015.

## SEMINARS AND MEETUPS

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- 2020 I'm a Data Scientist, Git me out of here!, *R-Ladies Dublin Meetup*,  
Dublin, Ireland, February 2020.
- 2019 Tree based models in R, *R-Ladies Dublin Meetup*,  
Dublin, Ireland, June 2019.
- 2019 An Introduction to Bayesian Regression Trees  
*Federal University of Paraná, Curitiba, Brazil*, March 2019.
- 2019 googleAnalyticsR & purrr, *R-Ladies São Paulo Meetup*,  
São Paulo, Brazil, March 2019.
- 2018 The steps of a Kaggle project, *Hamilton Institute*  
Maynooth, Ireland, November 2018.
- 2018 Git & GitHub tutorial, *Hamilton Institute*  
Maynooth, Ireland, October 2018.
- 2018 Basic R + dplyr, *R-Ladies São Paulo Meetup*,  
São Paulo, Brazil, August 2018.
- 2018 Basic R + dplyr, *R-Ladies Curitiba Meetup*,  
Curitiba, Brazil, June 2018.

## POSTER PRESENTATIONS

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- 2019 Regularization Methods in  
Random Forests,  
*Machine Learning Summer School*,  
London, England, July 2019.
- 2019 Construction and Implementation of  
Multivariate Dispersion Models,  
*XVI School of Regression Models*,  
Pirenópolis, Brazil, March 2019.
- 2018 Chord Based Feature Extraction for  
Genre Classification in Popular  
Brazilian Music, *1st WiMIR*,  
Paris, France, September 2018.
- 2017 Non-Linear Models Catalog,  
*XV School of Regression Models*,  
Goiânia, Brazil, March 2017.
- 2016 The use of R at Federal University  
of Paraná, *I International Seminar  
of Statistics with R*, Niterói,  
Rio de Janeiro, Brazil, May 2016.

## SHORT COURSES ATTENDED

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- 2019 Design of Experiments and Studies, *Oxford University*, 12h
- 2019 Flexible Regression, *Oxford University*, 12h
- 2019 Model assessment and selection, *Cambridge University*, 3h
- 2019 A Dive into Stan's C++ Model Concept, *Cambridge University*, 3h
- 2019 Hierarchical Modeling with Stan, *Cambridge University*, 6h
- 2019 Machine Learning Summer School, *University College London*, 40h
- 2019 High-dimensional Statistics, *Durham University*, 12h
- 2019 Computer Intensive Statistics, *Durham University*, 12h
- 2019 Shiny, *IV International Seminar on Statistics with R*, 3h
- 2019 Statistics in the Cloud, *Dundalk*, 3h
- 2019 Statistical Modelling, *University of Southampton*, 12h
- 2019 Applied Stochastic Processes, *University of Southampton*, 12h
- 2019 Applied Machine Learning, *Rstudio Conference 2019*, Austin, Texas, 12h
- 2018 Statistical Computing, *Cambridge University*, 12h
- 2018 Statistical Inference, *Cambridge University*, 12h
- 2018 Web Scraping with R, *Curso-R*, 8h.
- 2018 Introduction to Cognitive Diagnostic Models with Stan, *Federal University of Paraná*, 2h.
- 2018 Distributed data structures with R, *Federal University of Paraná*, 2h.
- 2018 Dashboards with R, *Curso-R*, 4h.
- 2018 Probability Theory, *University of São Paulo*, 60h.
- 2017 Machine Learning with R, *University of São Paulo*, 4h.
- 2017 APIs with R, *University of São Paulo*, 4h.
- 2017 Multivariate Covariance Generalized Linear Models for the Analysis of Experimental Data, *Federal University of Lavras*, 4h.
- 2017 Regression models for count data: beyond the Poisson model, *Goiânia, GO, Brazil*, 4h.
- 2017 Elements of Computational Statistics, *Federal University of São Carlos*, 6h.
- 2016 Modelling with SAS, *HSBC Bank Brazil*, 20h
- 2016 Statistical Modelling Academy, *HSBC Bank Brazil*, 192h.
- 2015 Conversation in English, *English without Borders*, *Federal University of Paraná*, 16h.
- 2015 English for Professional and Academic Goals, *English without Borders*, *Federal University of Paraná*, 16h.
- 2015 English with Music, *English without Borders*, *Federal University of Paraná*, 16h.
- 2015 Advanced Excel, *Center of School-Enterprise Integration of Paraná*, 20h.

## TRAVEL & DIVERSITY GRANTS

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- 2019 ISMIR 2019, Conference Scholarship, Delft, The Netherlands.
- 2019 PyCon Ireland 2019, Conference Scholarship, Dublin, Ireland.
- 2019 StanCon 2019, Conference Scholarship, Cambridge, England.
- 2019 Women in Data Science, Travel & Conference Scholarship, Zurich, Switzerland.
- 2019 Rstudio Conference, Travel & Conference Scholarship, Austin, Texas.

## GRANTS

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- 2017 Scientific Initiation, supervised by Prof. PhD Wagner Hugo Bonat, *Construction of Multivariate Probability Distributions*. Duration: 12 months
- 2016 Project of Tutorial Extension in Statistics, supervised by Prof. Dr. Walmes Marques Zeviani, *Non-Linear Models Catalog*. Duration: 10 months
- 2015 Laboratory of Applied Statistics, supervised by Prof. Dr. Cesar Augusto Taconeli and Prof. Dr. Fernanda Buhner Rizzato. Duration: 6 months
- 2014 Teaching Initiation Program, supervised by Prof. Dr. Jomar Camarinha Filho Course: Basic Statistics. Duration: 4 months
- 2014 Teaching Initiation Program, supervised by Prof. Dr. Jomar Camarinha Filho Course: Statistics II. Duration: 4 months

## REFEREES

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+353 1 716 2422,

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**Prof. PhD Wagner Hugo Bonat**

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