

BRUNA WUNDERVALD

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@bwundervald github.com/brunaw

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

LaTeX

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

- **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

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>.
- B. Wundervald, A. Parnell, and K. Domijan, "Generalizing Gain Penalization for Feature Selection in Tree-based Models," *ArXiv e-prints*, arXiv:2006.07515, arXiv:2006.07515, Jun. 2020. arXiv: [2006.07515](https://arxiv.org/pdf/2006.07515) [[stat.ML](https://arxiv.org/pdf/2006.07515)]. [Online]. Available: <https://arxiv.org/pdf/2006.07515>.

Software

- **vagalumer: Access to the 'vagalume' api** - Author, [Online] Available: <https://CRAN.R-project.org/package=vagalumer>
- **chorrds: Music chords extraction** - Author, [Online] Available: <https://CRAN.R-project.org/package=chorrds>
- **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 chorrds package*, 2018. [Online]. Available: <https://r-music.rbind.io/posts/2018-08-19-chords-analysis-with-the-chorrds-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

- | | |
|-----------|--|
| 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

- 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

- 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

- 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

- 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

- 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

- 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

Prof. PhD Andrew Parnell

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Prof. PhD Paulo Justiniano Ribeiro Júnior

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