



## CURRICULUM VITAE (CVA)

**IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.**

CV date	12/01/2022
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### Part A. PERSONAL INFORMATION

First name	Amanda		
Family name	Fernández Fontelo		
Gender (*)	Female	Birth date	13/03/1991
Social Security, Passport, ID number	39435240S		
e-mail	<a href="mailto:amanda@mat.uab.cat">amanda@mat.uab.cat</a>		
Open Research and Contributor ID (ORCID)(*)	0000-0002-0822-6915		

(\*) Mandatory

#### A.1. Current position

Position	Post-doctoral researcher Juan de la Cierva-Incorporación		
Initial date	01/01/2022		
Institution	Universitat Autònoma de Barcelona		
Department/Center	Departament de Matemàtiques (Facultat de Ciències)		
Country	Spain	Teleph. number	(+34) 619953877
Key words	time series; count data; functional data; under-reporting; mouse-tracking		

#### A.2. Previous positions (research activity interruptions, art. 45.2.c)

Period	Position/Institution/Country/Interruption cause
2018-2021	Post-doctoral researcher (Humboldt-Universität zu Berlin, Germany)
2014-2018	Pre-doctoral researcher (Universitat Autònoma de Barcelona, Spain)

#### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Mathematics	Universitat Autònoma de Barcelona (UAB)	2018
Master's degree in Statistics and Operations Research	Universitat Politècnica de Catalunya (UPC)	2015
Bachelor's degree in Applied Statistics	Universitat Autònoma de Barcelona (UAB)	2013

### Part B. CV SUMMARY

Dr. Amanda Fernández-Fontelo graduated with honors in 2013 with a bachelor's degree in Applied Statistics (UAB). In 2015, she received her master's degree in Statistics, Software, and Operations Research (UPC) and started her Ph.D. studies while pursuing her master's thesis. Dr. Fernández-Fontelo completed her Ph.D. in Mathematics (Cum Laude) from UAB in 2018, awarding the Ph.D. special prize. After receiving her doctorate, she worked as a post-doctoral researcher in the Chair of Statistics at Humboldt-Universität zu Berlin (HU, Germany) until December 2021. She is now a post-doctoral researcher (JdC Incorporación) in the Department of Mathematics (UAB). During her doctoral studies, she concentrated on developing new statistical methods for count data modeling to overcome a number of challenging questions in epidemiology, public health, and veterinary. The post-doctoral position at HU allowed her to establish a new research line in her research interests, aiming to develop new statistical methods for functional data. Dr.

Fernández-Fontelo also gained considerable expertise in mouse-tracking data methods for survey research purposes due to her contributions to improving data quality in online surveys using some of their new functional-type methods. She is also investigating innovative methods for earthquake modeling, co-authoring a Ph.D. thesis with Dr. Isabel Serra Mochales. Since 2014, she published a total of 14 papers in different peer-reviewed top-tier journals of methodological scope, e.g., *Statistics in Medicine* or *Statistical Modelling*, and applied scope, e.g., *PLoS ONE*, *BMC Veterinary Research*, *Social Science Computer Review* or *Scientific Reports*, and a book chapter in *Trends of Mathematics*. Of these 15 publications, she was first and corresponding author in nine (60.0%) and second author in five (33.3%) of the remaining. In addition, 13 out of the 15 research works were published in Q1 (66.7%) and Q2 (20.0%) journals, according to SCOPUS. Dr. Fernández-Fontelo's publications have a total of 230 citations (7-index), both based on Google Scholar. She participated in different research projects, including a collaborative project supported by the German Research Foundation, which covered her post-doctoral research position at HU. She also took part in two projects financed by MINECO, and a project funded by Instituto de Salud Carlos III, which helped estimate the daily number of COVID-19 cases which are not officially registered (under-reported). The outcomes of this last project had a wide-reaching influence on the media. Since 2014, she has participated in a number of national and international conferences and workshops, including 12 national and ten international oral contributions. Four of these were invited oral contributions, and two resulted in conference proceedings publications. In addition, she did different international research stages in Canada, the United States, the United Kingdom, and Germany, and was invited to give seminars in different universities, including the University of British Columbia and the University of Victoria (Canada), Ludwig Maximilians Universität LMU and Helmut-Schmidt Universität (Germany), and Université de Franche-Comté in France. She taught different Bachelor's and master's courses since 2015, including the courses of Time Series Analysis and Statistical Inference for the Master of Sciences at the School of Business and Economics at HU, as well as several courses in the Bachelor's degrees of Applied Statistics and in Computational Mathematics and Data Analytics, both at UAB. She has also supervised several bachelor's and master's degrees theses for the Bachelor's degree in Applied Statistics (UAB) and the Master's Degree of Sciences at the School of Business and Economics (HU), and she is currently co-supervising a Ph.D. thesis in the Department of Mathematics (UAB), jointly with Dr. Isabel Serra Mochales titled "Modelización estadística para eventos extremos en predicción de terremotos". She was awarded tenure-track teaching certification by the Agència de Qualitat Universitaria de Catalunya in March 2021. She also received a Juan de la Cierva (Incorporación) scholarship in mathematical sciences in October 2021 and a Maria Zambrano scholarship in Sciences and Engineering in December 2021. Finally, she worked as a reviewer of a number of journals such as *Entropy* or  *SORT*. Currently, she is negotiating a collaboration contract between Boehringer Ingelheim and the Department of Mathematics to make knowledge transference from the university to the industry.

## Part C. RELEVANT MERITS

### C.1. Publications

- 1 **Fernández-Fontelo, A.**, Kieslich, P.J., Henninger, F., Kreuter, F., & Greven, S. (2021). Predicting question difficulty in web surveys: A machine-learning approach based on mouse movement features. *Social Science Computer Review*.  
<https://doi.org/10.1177/08944393211032950>
- 2 Moriña, D., **Fernández-Fontelo, A.**, Cabaña, A., & Puig, P. (2021). New statistical model for misreported data with application to current public health challenges. *Scientific Reports*. 11, 23321. <https://doi.org/10.1038/s41598-021-02620-5>
- 3 Moriña, D., **Fernández-Fontelo, A.**, Cabaña, A., Puig, P., Monfil, L., Brotons, M., & Díaz,

- M. (2021). Quantifying the under-reporting of uncorrelated longitudinal data: the genital warts example. *BMC Medical Research Methodology*, 21, 6.  
<https://doi.org/10.1186/s12874-020-01188-4>
- 4 **Fernández-Fontelo, A.**, Moriña, D., Cabaña, A., Arratia, A., & Puig, P. (2020). Estimating the real burden of diseases under a pandemic situation: The SARS-CoV2 case, *PLoS ONE*, 15(12), e0242956. <https://doi.org/10.1371/journal.pone.0242956>
  - 5 **Fernández-Fontelo, A.**, Henninger, F., Kieslich, P.J., Kreuter, F., & Greven, S. (2020). A new model for multivariate functional data classification with application to the prediction of difficulty in web surveys using mouse movement trajectories. *Proceedings of the 35<sup>th</sup> International Workshop on Statistical Modelling*, 73-78, Bilbao, BasqueCountry, Spain, 20-24, July 2020. ISBN 978-84-1319-267-3.
  - 6 **Fernández-Fontelo, A.**, Puig, P., Cáceres, G., Romero, L., Revie, C., Sanchez, J., Dórea, F.C., & Alba-Casals, A. (2020). Enhancing the monitoring of fallen stock at different hierarchical administrative levels: an illustration on dairy cattle from regions with distinct husbandry, demographical and climate traits. *BMC Veterinary Research*, 16(110), 1-13.  
<https://doi.org/10.1186/s12917-020-02312-8>
  - 7 **Fernández-Fontelo, A.**, Cabaña, A., Joe, H., Puig, P., & Moriña, D. (2019). Untangling serially dependent under-reported count data for gender-based violence. *Statistics in Medicine*, 38(22), 4199-4475. <https://doi.org/10.1002/sim.8306>
  - 8 **Fernández-Fontelo, A.**, Puig, P., Ainsbury, E.A., & Higuera, M. (2018). An exact goodness-of-fit test based on the occupancy problems to study zero-inflation and zero-deflation in biological data. *Radiation Protection Dosimetry*, 179(4), 317-326.  
<https://doi.org/10.1093/rpd/ncx285>
  - 9 **Fernández-Fontelo, A.**, Fontdecaba, S., Alba, A., & Puig, P. (2017). Integer-valued AR processes with Hermite innovations and time-varying parameters: An application to bovine fallen stock surveillance at a local scale. *Statistical Modelling*, 17(3), 172-195.  
<https://doi.org/10.1177/1471082X16683113>
  - 10 **Fernández-Fontelo, A.**, Cabaña, A., Puig, P., & Moriña, D. (2016). Under-reported data analysis with INAR-hidden Markov chains. *Statistics in Medicine*, 35(26), 4875-4890.  
<https://doi.org/10.1002/sim.7026>

## C.2. Congress

**Title of the work:** An ensemble-based method for multivariate functional data classification with an application to survey research

**Authors:** Fernández-Fontelo, A., Henninger, F., Kieslich, P.J., Kreuter, F., & Greven

**Name of the conference:** Statistische Woche 2021

**Type of participation:** Oral communication (contributed)

**City and date of event:** Kiel, Germany (September 2021)

**Title of the work:** A new model for multivariate functional data classification with application to the prediction of difficulty in web surveys using mouse movement trajectories

**Authors:** Fernández-Fontelo, A., Henninger, F., Kieslich, P.J., Kreuter, F., & Greven

**Name of the conference:** 35th International Workshop on Statistical Modelling

**Type of participation:** Oral communication (contributed)

**City and date of event:** Bilbao, Spain (July 2020)

**Title of the work:** INAR-hidden Markov chains to deal with under-reporting in count time series

**Authors:** Fernández-Fontelo, A., Cabaña, A., Joe, H., Moriña, D., & Puig, P.

**Name of the conference:** 14th Workshop on Stochastic Models, Statistics and their Application

**Type of participation:** Oral communication (invited)

**City and date of event:** Dresden, Germany (March 2019)

**Title of the work:** Modelling count time series under a state-dependent under-reporting scheme

**Authors:** Fernández-Fontelo, A., Cabaña, A., Joe, H., Moriña, D., & Puig, P.

**Name of the conference:** XXIXTH International Biometric Conference

**Type of participation:** Oral communication (contributed)

**City and date of event:** Barcelona, Catalonia, Spain (July 2018)

### C.3. Research projects

**Name of the project:** Statistical Modeling Using Mouse Movements to Model Measurement Error and Improve Data Quality in Web Surveys

**Entity where the project took place:** Humboldt-Universität zu Berlin (HU) and Mannheim Universität (MU)

**Name of principal investigator:** Dr. Sonja Greven (HU) and Dr. Frauke Kreuter (MU)

**Nº of researchers:** 4

**Funding entity of bodies:** Deutsche Forschungsgemeinschaft (GR 3793/2-1 & KR 2211/5-1)

**Start-End- date:** 2017-2021

**Type of participation:** post-doctoral researcher

**Name of the project:** Cuantificación en tiempo real de nuevos casos no reportados de COVID-19 en España

**Entity where the project took place:** Centre de Recerca Matemàtica (COV20/00115)

**Name of principal investigator:** Dr. David Moriña (CRM)

**Nº of researchers:** 13

**Funding entity of bodies:** Instituto de Salud Carlos III

**Start-End- date:** 2020-2021

**Total amount:** 54.842 Euros

**Type of participation:** researcher

**Name of the project:** Modelización estadística de riesgos medioambientales, tecnológicos y de la salud

**Entity where the project took place:** Universitat Autònoma de Barcelona

**Name of principal investigator:** Dr. Pere Puig (UAB) & Dr. Joan del Castillo (UAB)

**Nº of researchers:** 12

**Funding entity of bodies:** MINECO (MTM2015-69493-R)

**Start-End- date:** 2016-2019

**Total amount:** 113.135 Euros

**Type of participation:** pre-doctoral researcher

**Name of the project:** Afrontando retos de investigación bioestadística con proyección internacional

**Entity where the project took place:** 25 national and 16 international universities and 23 research institutions

**Name of principal investigator:** Dr. Carmen Cadarso (head of BIOSTATNET, USC), Dr. Pere Puig (head of Catalunya-SEA node, UAB)

**Nº of researchers:** 189

**Funding entity of bodies:** MINECO (MTM2015-69069-REDT)

**Start-End- date:** 2015-2017

**Total amount:** 40.000 Euros

**Type of participation:** researcher