Joaquín Martínez-Minaya

Personal information

Basic Information

First and Family name: Joaquín Martínez-Minaya
ID number: 47099962X **Age:** 33
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ResearchGate: @Joaquin-Martinezminaya
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Education

2014 - 2019. **Ph.D. in Statistics and Optimization**
*University of Valencia,*Valencia (Spain). Cum laude
2013 - 2015. **M.Sc. in Biostatistics**
*University of Valencia,*Valencia (Spain).Honours
2008 - 2013. **B.Sc. in Mathematics**
*University of Valencia,*Valencia (Spain).

Profesional experience

2021 - Present	**Assistant Professor**, Department of Applied Statistics and Operational Research and Quality, Polytechnic University of Valencia, Valencia, Spain.
2019 - 2021	**Postdoctoral researcher**, Basque Center for Applied Mathematics (BCAM), Bilbao, Spain.
2016 - 2019	**Predoctoral researcher**, University of Valencia, Valencia, Spain.
2014 - 2016	**Biostatistician**, Valencian Institute for Agricultural Research (IVIA), Valencia, Spain.
2014	**Biostatistician**, Experior S.L., Valencia, Spain.

Summary

My primary interest lies in **Applied Bayesian Statistics**, where I am actively engaged in advancing the field of **Species Distribution Modeling** through the application of spatio-temporal Statistics. This involves a comprehensive exploration of the dynamic behaviors exhibited by plant and marine species, utilizing sophisticated modeling techniques to enhance our understanding of their spatial and temporal patterns.

Currently, **health and environment** stand as fundamental pillars of my research, and I am currently involved in innovative projects such as studying microbiota using multivariate hierarchical Bayesian models, assessing measurement agreement through Bayesian mixed models, conducting medical image analysis with Bayesian spatio-temporal models, and applying spatial statistics to the field of **spatial transcriptomics**.

Moreover, my expertise extends to **Bayesian computational methods**, where I specialize in implementing techniques within the framework of the Integrated Nested Laplace Approximation (INLA) and Markov Chain Monte Carlo Methods (MCMC). This computational aspect forms an integral part of my holistic approach to addressing diverse challenges within the health and environmental sectors.

Relevant Publications

1. **J. Martínez-Minaya**, F. Lindgren, A. López-Quílez, D. Simpson, and D. Conesa (2023). The Integrated Nested Laplace Approximation for fitting Dirichlet regression models. Journal of Computational and Graphical Statistics, 1-19. `https://doi.org/10.1080/10618600.2022.2144330`

2. M. Hayet-Otero, F. García-García, D. J. Lee, **J. Martínez-Minaya**, P. P. España Yandiola, I. Urrutia Landa, M. Nieves Ermecheo, J. M. Quintana, R. Menéndez, A. Torres, R. Zalacain Jorge, I. Arostegui, with the COVID-19 and Air Pollution Working Group (2023). Extracting relevant predictive variables for COVID-19 severity prognosis: An exhaustive comparison of feature selection techniques. Plos one, 18(4), e0284150. `https://doi.org/10.1371/journal.pone.0284150`

3. B. Sarzo, **J. Martínez-Minaya**, M.G. Pennino, D. Conesa, and M. Coll (2023). Modelling seabirds biodiversity through Bayesian Spatial Beta regression models: A proxy to inform marine protected areas in the Mediterranean Sea. Marine Environmental Research, 105860. `https://doi.org/10.1016/j.marenvres.2022.105860`.

4. I. Anguelovski, J. J. Connolly, H. Cole, M. Garcia-Lamarca, M. Triguero-Mas, F. Baró, ... and **J. Martínez-Minaya**

(2022). Green gentrification in European and North American cities. Nature communications, 13(1), 3816. `https://doi.org/10.1038/s41467-022-31572-1`

5. X. Barber, D. Conesa, A. López-Quílez, **J. Martínez-Minaya**, I. Paradinas and M.G. Pennino (2021). Incorporating biotic information in Species Distribution Models: a coregionalised approach. Mathematics, 9 (4), 417. `https://doi.org/10.3390/math9040417`

6. **J. Martínez-Minaya**, D. Conesa, A. López-Quílez, J. L. Mira, and A. Vicent (2021). Modelling inoculum availability of *Plurivorosphaerella nawae* in persimmon leaf litter with Bayesian beta regression. Phytopathology, 111(7), 1184-1192. `https://doi.org/10.1094/PHYTO-08-20-0359-R`

7. **J. Martínez-Minaya**, D. Conesa, H. Bakka and M. G. Pennino (2019). Dealing with physical barriers in bottlenose dolphin (*Tursiops truncatus*) distribution. Ecological Modelling, 406, 44 – 49. `https://doi.org/10.1016/j.ecolmodel.2019.05.013`

8. **J. Martínez-Minaya**, D. Conesa, C. Alonso-Blanco, M.J. Fortin, X. Picó and A. Marcer (2019). A hierarchical Bayesian Beta regression approach to study the effects of geographic genetic structure and spatial autocorrelation on species distribution range shifts. Molecular Ecology Resources, 19(4), 929 – 943. `https://doi.org/10.1111/1755-0998.13024`

9. **J. Martínez-Minaya**, M. Cameletti, D. Conesa and M.G. Pennino (2018). Species distribution modeling: a statistical review with focus in spatio-temporal issues. Stochastic Environmental Research and Risk Assessment, 32(11), 3227 – 3244. `https://doi.org/10.1007/s00477-018-1548-7`

10. **J. Martínez-Minaya**, D. Conesa, A. López-Quílez and A. Vicent (2018). Spatial and climatic factors associated with the geographical distribution of citrus black spot disease in South Africa. A Bayesian latent Gaussian model approach. European Journal of Plant Pathology, 151(4), 991 – 1007. `https://doi.org/10.1007/s10658-018-1435-6`

International Research Stays

30/10/2023-05/11/2023	**University of Edinburgh, Edinburgh, UK**, PROFESSOR: *Vanda Inácio*. Bayesian mixed models for agreement measures in Medicine.
16/01/2023-20/01/2023	**University of Edinburgh, Edinburgh, UK**, PROFESSOR: *Vanda Inácio*. Bayesian mixed models for agreement measures in Medicine.
23/08/2022-06/09/2022	**University of Edinburgh, Edinburgh, UK**, PROFESSOR: *Ruth King*. Compositional data for microbiome analysis.
25/07/2022-04/08/2022	**Basque Center For Applied Mathematics, Bilbao, Spain**, PROFESSOR: *Dae-Jin Lee*. Compositional data using Hamiltonian Monte Carlo.
11/11/2022-11/12/2022	**King Abdullah University of Science and Technology, Saudi Arabia**, PROFESSOR: *Haavard Rue*. Implementing R-package to deal with compositional data using INLA methodology. Implementing validation measures in this context.
16/02/2020-12/03/2020	**King Abdullah University of Science and Technology, Saudi Arabia**, PROFESSOR: *Haavard Rue*. Compositional data using INLA methodology.
01/09/2018-30/11/2018	**University of Edinburgh, Edinburgh, UK**, PROFESSOR: *Finn Lindgren*. Implementation of a new R-package to approximate the Bayesian Dirichlet Regression using INLA methodology.
01/09/2017-30/11/2017	**University of Edinburgh, Edinburgh, UK**, PROFESSOR: *Finn Lindgren*. Learning deeply a Stochastic Partial differential Equation (SPDE) methodology to approximaete Bayesian spatio-temporal models using the Integrated Nested Laplace Approximation (INLA), and develop a method to approximate the Bayesian Dirichlet Regression.

Computer skills

OS	Microsoft Windows, Linux	Mathematics	Wolfram Mathematica, MatLab, LaTeX
Programming	C++, PYTHON, HTML, MARKDOWN, SHINY	Statistics	R, INLA, BUGS, JAGS, STAN
Graphics	GIMP		