Marta Sestelo

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Marta Sestelo is Technical Manager of Data Analytics & AI at the Galician Research and Development Center in Advanced Telecommunications (Gradiant) and Lecturer at the Department of Statistics and O. R. at University of Vigo (accredited by the ANECA - Spanish National Agency for Quality Assessment and Accreditation - as Associate Professor). In 2013, she received her PhD in Statistics and O.R. from this university, with international accreditation, with the title 'Development and computational implementation of estimation and inference methods in flexible regression models. Applications in Biology, Engineering and Environment'. During this period, and as part of her learning process in the field of computational development, she carried out a predoctoral research stay at the Department of Mathematics and Applications at University of Minho. After that, she worked as postdoctoral researcher at the Center of Mathematics (CMAT) at the same university, funded by a highly competitive fellowship of the Fundação para a Ciência e a Tecnologia (FCT) of Portugal (2014-2018). Just before getting this opportunity, she combined her research with some teaching experience at the Department of Mathematics at Autonomous University of Barcelona during the 2013/2014 academic year.

During these last few years she has received institutional support, both from Spain and other countries, to develop her scientific work (4 predoctoral and 1 postdoctoral fellowships). She has also taken part in 25 national and international research projects, presented 48 papers in national and international conferences, developed software in form of 6 R packages and, so far, written 18 articles published on JCR journals such as Journal of Statistical Software, Journal of the Royal Statistical Society, Biometrical Journal, The R Journal, etc. (Statistics & Probability) or Applied Mathematics and Computation, Fisheries Research, Atmospheric Environment, etc. On an ongoing basis she collaborates with several researchers in the field of Statistics, as well as in other fields (Luís Meira Machado, CMAT; Isabel Serra Mochales, Centre de Recerca Matemàtica; Gorka Bidegain, University of Southern Mississippi; Ángel Guerra, Consejo Superior de Investigaciones Científicas; Celestino Ordóñez, Universidad de Oviedo; Turgut Durduran, Institute of Photonic Sciences; Jorge Hernández Urcera, Instituto Español de Oceanografía, etc.) obtaining as a result a multidisciplinary research.

She has broad experience on the development of new techniques, methodologies and algorithms linked with data analysis and artificial intelligence, particularly in the fields of machine learning, computational statistics, spatial analysis, time series analysis, survival analysis, software development and cybersecurity. She is currently focusing her interest on the resolution of real life problems throughout (big)data science and intelligent systems. At the moment, her lines of research are closely related to feature selection, predictive modeling, nonparametric curves estimation, clustering, model performance, testing procedures, bootstrap resampling methods, simulation process and optimization, all of them with applications to different areas of knowledge. Besides, she strongly believes in the need for a more open, transparent and reproducible science, improving the society through information and communications technology. Recently, she has co-founded WiMLDS Galicia - Women in Machine Learning & Data Science, see http://wimlds.org/about-the-galicia-team/.

More information on https://sestelo.github.io.

Education

2013 Ph.D. in Statistics and O. R., International Doctor. University of Vigo, Spain. "Development and computational implementation of estimation and inference methods in flexible regression models. Applications in Biology, Engineering and Environment" (PDF). Advisor: Javier Roca Pardiñas. Committee: Stephan Sperlich (University of Geneva), María Durbán (Carlos III University of Madrid) and Jacobo de Uña Álvarez (University of Vigo).

2012 M.Sc. in Statistical Techniques, University of Vigo, Spain.

2006 M.Sc. in Marine Biology and Aquaculture, University of Santiago de Compostela, Spain.

2004 B.Sc. in Biology, University of Santiago de Compostela, Spain.

Employment

2019- Technical Manager of Data Analytics & AI at Gradiant, Spain.

2018 Senior Data Scientist at Gradiant, Spain.

2014- Lecturer at Department of Statistics and Operations Research, University of Vigo, Spain.

2014-2018 Postdoctoral Researcher at Centre of Mathematics, University of Minho, Portugal.

2013-14 Postdoctoral Researcher at Department of Mathematics, Autonomous University of Barcelona, Spain.

2010-13 Lecturer at Department of Statistics and Operations Research, University of Vigo, Spain.

2010-13 Researcher at Department of Statistics and Operations Research, University of Vigo, Spain.

2005-09 Researcher at Department of Animal Biology, University of Santiago de Compostela, Spain.

Computer skills and Languages

Experience programming in R, Python, FORTRAN, C, LaTeX, Markdown, Maple.

Knowledge and use of Git, Docker, Travis-CI, TensorFlow, Spark, H2O.ai, ELK Stack, Shiny Dashboard and D3.js library (Plotly and rCharts).

Wide use of RStudio, PyCharm, Sublime text.

Some experience using bash shell scripting, OpenMP, InfluxDB, SQL, Mongo.

Some knowledge of HTML, CSS.

Experience with SPSS, Maxima, Lindo, Microsoft Office, Bibtex, Refworks software.

Spanish, Galician – Native; English – Upper Intermediate; Portuguese, Catalan – Intermediate.

Training courses taught

2017   A short course on Survival Analysis applied to the Financial Industry, BBVA Data & Analytics, Madrid.

2018   Machine Learning in Practice, GDG (Google Developers Groups) DevFest Galicia 2018, Santiago de Compostela.

2018   TEGRA Cybersecurity Center Skillshare Plan 2018, Data exploration, Gradiant, Vigo.

2018   TEGRA Cybersecurity Center Skillshare Plan 2018, Introduction to Machine Learning Techniques, Gradiant, Vigo.

2013   Workshop on creation of packages and reports with R, Vicerrectorado de Alumnado, Docencia y Calidad, University of Vigo.

Honors, awards & grants

2020   Iacobus Papers Award "A method for determining groups in multiple survival curves", Higher Education Cooperation Program for the Euro-Region of Northern Portugal and Galicia.

2019   Winner of Challenges in Cybersecurity, "Classification of attacks to SSH honeypots", Project: RedBee, INCIBE - Instituto Nacional de Ciberseguridad (Spain).

2019   Finalist Galicia Open Future_ Program (Reto Coren), Project: Pig intelligent management based on Machine Learning (PIGML), Telefónica and Galician Regional Government (Spain).

2018   Finalist Galicia Open Future_ Program (Reto Nueva Pescanova), Project: ENhancing the manaGement Of the whiteleg shRimp culture through Data Analysis (ENGORDA), Telefónica and Galician Regional Government (Spain).

2015   Best poster award, European R Users Meeting - eRum2018 (Hungary).

2015   Research Award (Science and Technology), Pontevedra Provincial Council (Spain).

2014-18 PostDoctoral Research Grant, Fundaçao para a Ciência e a Tecnologia (FCT), Ministry of Science, Technology and Higher Education (Portugal).

2006-09 María Barbeito Grant (Ph.D. training), Galician Regional Government (Spain).

2005-06 Predoctoral Grant, Galician Regional Government (Spain).

2005   Assistant Lecturer Grant, University of Santiago de Compostela (Spain).

2003-04 Collaboration Grant, Ministry of Education, Culture and Sport (Spain).

Publications

Journal articles

TBA N. M. Villanueva, M. Sestelo, C. Ordóñez and J. Roca-Pardiñas. Comparing regression functions with an automatic bootstrap-based selection of groups. Journal of Simulation and Computation, Submitted.

2019 M. Sestelo and J. Roca-Pardiñas. Testing critical points of regression curves. An application to the management of aquatic living resources. Journal of the Royal Statistical Society: Series C, 68(4): 1051–1070.

2019 N. M. Villanueva, M. Sestelo, L. Meira-Machado. A Method for Determining Groups in Multiple Survival Curves. Statistics in Medice, 38(5):866–877.

2019 L. Meira-Machado and M. Sestelo. Estimation in the progressive illness-death model: A non-exhaustive review Biometrical Journal, 61(2):245–263.

2017 M. Sestelo, N. M. Villanueva, J. Roca-Pardiñas and L. Meira-Machado. npregfast: An R Package for Nonparametric Estimation and Inference in Life Sciences. Journal of Statistical Software, 82 (12), 1–27.

2016 L. Meira-Machado and M. Sestelo. condSURV: An R Package for the Estimation of the Conditional Survival Function for Ordered Multivariate Failure Time Data. The R Journal, 8 (2), 460–473.

2016 M. Sestelo, N. M. Villanueva, J. Roca-Pardiñas and L. Meira-Machado. FWDselect: An R Package for Variable Selection in Regression Models. The R Journal, 8 (1), 132–148.

2016 A. Guerra, J. Hernández-Urcera, M. E. Garcia, M. Sestelo, M. Regueira, M. Gilcoto and A. F. González. Spawning habitat selection by the common cuttlefish Sepia officinalis in the Cíes Islands (Northwest Spain). Fisheries Research, 183, 44–54. doi:10.1016/j.fishres.2016.04.023

2016 L. Meira-Machado, M. Sestelo and A. Gonçalves. Nonparametric estimation of the survival function for ordered multivariate failure time data: a comparative study. Biometrical Journal, 58 (3), 623–634. doi: 10.1002/bimj.201500038

2015 A. Guerra, J. Hernández-Urcera, M. E. Garcia, M. Sestelo, M. Regueira, A. F. González, M. Cabanellas-Reboredo, M. Calvo-Manazza and B. Morales-Nin. Spawning habitat selection by Octopus vulgaris: New information for a more suitable management of this resource. Fisheries Research, 167, 313–322. doi: 10.1016/j.fishres.2015.03.011

2015 G. Bidegain, X. Guinda, M. Sestelo, J. Roca-Pardiñas, A. Puente and J.A. Juanes. Assessing the suitability of management measures in the commercial goose barnacle Pollicipes pollicipes (Gmelin, 1789) fishery. Ocean and Coastal Management, 104, 150–158.
doi: 10.1016/j.ocecoaman.2014.12.015

2014 A. Guerra, J. Hernández-Urcera, M. E. Garcia, M. Sestelo, M. Regueira, A. F. González, M. Cabanellas-Reboredo, M. Calvo-Manazza and B. Morales-Nin. Dwellers in dens on sandy bottoms: Ecological and behavioural traits of Octopus vulgaris. Scientia Marina, 78 (3), 405-414. doi: 10.3989/ scimar.04071.28F

2014 M. Sestelo, J. Roca-Pardiñas and C. Ordóñez. Predicting SO_2 pollution incidents by means of additive models with optimum variable selection. Atmospheric Environment, 95, 151–157. doi: 10.1016/ j.atmosenv.2014.06.025

2013   N. M. Villanueva, M. Sestelo, C. Ordóñez and J. Roca-Pardiñas. Comparing regression functions with an automatic selection of groups. Discussion Papers in Statistics and Operations Research, nº 13/07.

2013   M. Sestelo, N. M. Villanueva and J. Roca-Pardiñas. `FWDselect`: Variable selection algorithm in regression models. Discussion Papers in Statistics and Operations Research, nº 13/02.

2013   G. Bidegain, M. Sestelo, J. Roca-Pardiñas and J. A. Juanes. Estimating a new suitable catch size for two clam species: Implications for shellfishery management. Ocean and Coastal Management, 71, 52–63. doi: 10.1016/j.ocecoaman.2012.09.009

2012   M. Sestelo and J. Roca-Pardiñas. Testing critical points of regression curves. An application to the management of aquatic living resources. Discussion Papers in Statistics and Operations Research, nº 12/06.

2012   C. Ordóñez, M. Sestelo, J. Roca-Pardiñas and E. Covián. Variable selection in regression models used to analyse Global Positioning System accuracy in forest environments. Applied Mathematics and Computation, 219, 2220–2230. doi: 10.1016/j.amc.2012.08.069

2011   M. Sestelo, N. M. Villanueva and J. Roca-Pardiñas. Selecting variables in regression models. A new approach to the prediction of time series of SO_2. AIP Conference Proceedings, 1389, 1984–1987. doi: 10.1063/1.3637003

2011   N. M. Villanueva, M. Sestelo and J. Roca-Pardiñas. An R package for analysing factor-by-curve interactions AIP Conference Proceedings, 1389, 1809–1812. doi: 10.1063/1.3636960

2011   M. Sestelo and J. Roca-Pardiñas. A new approach to estimation of the length-weight relationship of Pollicipes pollicipes (Gmelin, 1789) on the Atlantic coast of Galicia (Northwest Spain): Some aspects of its biology and management. Journal of Shellfish Research, 30 (3), 939–948. doi: 10.2983/035.030.0336

2010   M. Sestelo and J. Roca-Pardiñas. Length-weight relationship of Pollicipes pollicipes (Gmelin, 1789) on the Atlantic coast of Galicia (NW Spain). Some aspects of its biology and management. Discussion Papers in Statistics and Operations Research, nº 10/02.

Books

2017   M. Sestelo. A short course on Survival Analysis applied to the Financial Industry, BBVA Data & Analytics, Madrid, `https://bookdown.org/sestelo/sa_financial/`

Book chapters

2014   I. Martínez-Silva, M. Sestelo, G. Bidegain, A. Lorenzo-Arribas and J. Roca-Pardiñas. Nonparametric regression applied to sea urchin growth. In Sea Urchins: Habitat, Embryonic Development and Importance in the Environment. Marine Biology Series. Editor: E. Raymond Banks. Nova Publishers. ISBN: 978-1-63321-517-7.

Technical documents and Proceedings

2015   L. Meira-Machado, M. Sestelo and A. Gonçalves. "Nonparametric estimation of the survival function for ordered multivariate failure time data: a comparative study", Proceedings of the 30th International

Workshop on Statistical Modelling IWSM'30 volume 2, Linz, Austria.

2013   M. C. Iglesias-Pérez, M. Martínez-González, L. Casáis-Martínez, M. Sestelo and J. Roca-Pardiñas."Selección de variables aplicada a la identificación de factores de riesgo de lesión en fútbol profesional". Actas del XI Congreso Galego de Estatística e Investigación de Operacións, A Coruña, Spain, 2013.

2013   N. M. Villanueva, M. Sestelo and J. Roca-Pardiñas. "Cluster analysis of regression curves". Actas del XI Congreso Galego de Estatística e Investigación de Operacións, A Coruña, Spain, 2013.

2013   "Análisis clúster de curvas de regresión no paramétrica en recursos marinos", with N. M. Villanueva and J. Roca-Pardiñas. I Encontro Luso-Galaico de Biometría, Braga, Portugal.

2013   "Identificación de factores de riesgo de lesión el fútbol profesional", with M. C. Iglesias-Pérez, M. Martínez-González, L. Casáis-Martínez and J. Roca-Pardiñas. I Encontro Luso-Galaico de Biometría, Braga, Portugal.

2012   N. M. Villanueva, M. Sestelo, M. M. Fonseca and J. Roca-Pardiñas. Strand asymmetries in mitogenomes: toward detection of change points. Proceedings of Computational Statistics (20th International Conference on Computational Statistics, COMPSTAT 2012).

2012   M. Sestelo, N. M. Villanueva and J. Roca-Pardiñas. Selection algorithm in regression models. FWDselect package. Proceedings of Computational Statistics (20th International Conference on Computational Statistics, COMPSTAT 2012).

2011   M. Sestelo, N. M. Villanueva and J. Roca-Pardiñas. A forward stepwise algorithm to select variables in regression context. Actas del X Congreso Galego de Estatística e Investigación de Operacións, 2011.

2011   N. M. Villanueva, M. Sestelo and J. Roca-Pardiñas. NPRegFast: Analyzing factor by curve interactions. Actas del X Congreso Galego de Estatística e Investigación de Operacións, 2011.

2010   M. Sestelo and J. Roca-Pardiñas. Application of derivatives in the management of Pollicipes pollicipes (Gmelin, 1789) on the Atlantic coast of Galicia (NW Spain). Actas del XXXII Congreso Nacional de Estadística e Investigación Operativa, 2010.

2009   M. Sestelo, J. Roca-Pardiñas, V. Lustres and E. Fernández-Pulpeiro. Diferenciación geográfica en la talla mínima de captura de Pollicipes Pollicipes (Gmelin, 1789) en la costa atlántica gallega. Interacciones factor-por-curva. Actas del IX Congreso Galego de Estatística e Investigación de Operacións, 2009, 79–82.

2009   M. Sestelo, J. Roca-Pardiñas, V. Lustres and E. Fernández-Pulpeiro. Recartografiado y dinámica de poblaciones de especies de invertebrados marinos asociadas a sustratos rocosos de la Costa da Morte. Technical Document, Fundación Arao, 79–82.

Web articles, Blog post

2019   N. M. Villanueva, J. Lago and M. Sestelo. Primary sector: why we need to accelerate the digital transformation [Technical Post], URL: https://www.gradiant.org/en/blog/primary-sector-digital-transformation-i/

2018   N. M. Villanueva and M. Sestelo. Análisis de supervivencia: el aliado perfecto para la toma de decisiones en la industria 4.0 [Post Técnico], URL: https://www.gradiant.org/blog/analisis-supervivencia-industria-4-0/

Research projects participation

2020-23   Patients-centered SurvivorShIp care plan after Cancer treatments based on Big Data and Artificial Intelligence technologies (PERSIST), H2020-SC1-DTH, European Commission (H2020-SC1-DTH-2019, 875406).

2019-22   Tailored IoT & BigData Sandboxes and Testbeds for Smart, Autonomous and Personalized Services in the European Finance and Insurance Services Ecosystem (INFINITECH), H2020-ICT, European Commission (H2020-ICT-2018-3, 856632).

2017-20   Partnership Against Violent Radicalisation in the Cities (PRACTICIES), H2020-SEC, European Commission (H2020-SEC-2016-2017/H2020-SEC-2016-2017-1, 740072).

2017-20   Information Rights Management Advanced Systems (IRMAS), Axencia Galega de Innovacion, Galician government (IN853A 2017/13).

2018-20   New Methodological and Computational Advances in Nonparametric and Semiparametric Statistics (MECANOS2), Ministry of Science and Education, Spanish government (MTM2017-89422-P).

2016-18   Dynamization actions "Networks of Excellence", RTmath-in, Ministry of Economy and Competitiveness, MINECO, Spanish government (MTM2016-81745-REDT).

2016-19   Competitive Research Units - Consolidation and Structuring, Consellería de Cultura, Educación e Ordenación Universitaria, Galician government (GRC ED431C 2016/040).

2016-19   Accreditation, structuring and improvement of SUG's unique research centers and strategic groupings (CINBIO), co-financed by the Feder, under the Feder Galicia 2014-2020 operational program (ED431G/02).

2011-17   Advances in statistics and operational research, University of Vigo (CPI+D11-08 (IO1)).

2015-17   RD Units Base Plan - 2013/2015 - OE "Centre of Mathematics of the University of Minho (CMAT)", Fundação para a Ciência e a Tecnologia, Portuguesse government (UID/MAT/00013/2013).

2014-16   Dynamization actions "Networks of Excellence", RTmath-in, Ministry of Economy and Competitiveness, MINECO, Spanish government (MTM2014-52555-REDT).

2012-14   Flexible statistical inference: methodological advances and new applications in biomedicine, engineering, and health, Ministry of Science and Education, Spanish government (MTM2011-23204. 2012-2014).

2012-13   Competitive Research Units - Consolidation and Structuring, Galician government (CN2012/180).

2011-12   Program with Competitive Research Reference Groups, University of Vigo (11VIA02).

2010-12   Assessment of the impact of fishing tackle in fuel consumption on fishing vessels (Cooperativa de Armadores del Pesca del Puerto de Vigo – ARVI), Ministry of Economy and Industry, Galician government.

2010-12	Bioinformatics Galician Net, Department of Education and University Planning, Regional Government of Galicia.
2010	Competitive Research Units - Consolidation and Structuring (2 renovation), Galician government (IN845B-2010/035).
2010-11	Analysis of the major effects expected from the introduction and spread of use of selective fishing gears, Ministry of Science and Education, Spanish government (PSE_REDES - PSS-0600000-2009-36-3).
2009-10	Analysis of the major effects expected from the introduction and spread of use of selective fishing gears, Ministry of Science and Education, Spanish government (PSE_REDES - PSS-0600000-2009-36-2).
20010-11	Flexible statistical methods for the improvement of selectivity and selection of fishing gears for the reduction of discards, Ministry of Science and Education, Spanish government (PSE_REDES - PSS-0600000-2009-33-2).
2009-10	Flexible statistical methods for the improvement of selectivity and selection of fishing gears for the reduction of discards, Ministry of Science and Education, Spanish government (PSE_REDES - PSS-0600000-2009-33).
2009-11	Flexible statistical inference: methodological advances and new applications for Engineering, Economics and Biomedical Sciences, Ministry of Science and Education, Spanish government (MTM20008-03129).
2009-16	Contribution to a better knowledge of pathologies from a multidisciplinary perspective, INBIOMED (Biomedical Research), Department of Education and University Planning, Regional Government of Galicia.
2009-10	Stock assessment and monitoring extraction Anemonia viridis (Forskal, 1775) at different points Galician coasts, Sea Regional Government of Galicia.
2007-09	Modeling of the fixation of the mussel seed in the Galician coasts. Perfecting your cartography. Optimization of its extraction and quality control of the adult mussel, Regional Government of Galicia (07MMA001200PR).
2005-07	Remapped and dynamics of populations of some species of marine invertebrates associated with rocky substrata of Costa da Morte, Fundación Arao, Regional Government of Galicia (2004/CL592).
2005-06	Study on the valorization of fish sub-products in fish farms. Biochemical and microbiological aspects, Ministry of Environment and Rural and Marine Affairs, Spain (JACUMAR 2004 00518).

Software

2019	`clustcurv` package
	Author of `clustcurv` (https://cran.r-project.org/web/packages/clustcurv/), an R package for clustering curves with an automatic selection of their number. It is focused on both regression and survival curves, using the k-means or k-medians.
2017	`survidm` package

Author and maintainer of survidm (http://cran.r-project.org/web/packages/survidm), an R package which implement some newly developed methods for the estimation of several probabilities in an illness-death model. The package can be used to obtain nonparametric and semiparametric estimates for: transition probabilities, occupation probabilities, cumulative incidence function and the sojourn time distributions. Several auxiliary functions are also provided which can be used for marginal estimation of the survival functions.

2016   condSURV package

Author and maintainer of condSURV (http://cran.r-project.org/web/packages/condSURV), an R package to implement some newly developed methods for the estimation of the conditional survival function. The package implements three nonparametric and semiparametric estimators for these quantities. It also implements feasible estimation methods for these quantities conditionally on current or past covariate measures. Other related estimators are also implemented in the package. One of these estimators is the Kaplan-Meier estimator typically assumed to estimate the survival function. A modification of the Kaplan-Meier estimator, based on a preliminary estimation (presmoothing) of the censoring probability for the survival time, given the available information is also implemented.

2015   npregfast package

Author and maintainer of npregfast (http://cran.r-project.org/web/packages/npregfast), an R package to perform nonparametric estimation for analyzing interactions factor-by-curve. This package allows the user to obtain nonparametric estimates using local linear kernel smoothers and compare them between factor's levels. Also a feature of the package is its ability to draw inference about critical points, such as maxima or change points linked to the derivative curves. The inference (confidence intervals and tests) is based on bootstrap. This package allows not only to obtain smooth estimates also based on classical parametric models, as allometric model, one of the most used models in biology frameworks usually used to study the relationship between two biometrical variables. Additionally, we have implemented binning type acceleration techniques.

2012   FWDselect package

Author and mantainer of FWDselect (http://cran.r-project.org/web/packages/FWDselect), an R package that introduces a simple method to select the best model or best subset of variables using different types of data (continuous, binary or poisson) and applying it in different contexts (parametric or nonparametric).

2012   seq2R package

Author of seq2R (http://cran.r-project.org/web/packages/seq2R), an R package to detect compositional changes in genomic sequences. This software is useful for loading .fasta or .gbk files, and for retrieving sequences from GenBank dataset. This package allows to detect differences or asymmetries based on nucleotide composition by using local linear kernel smoothers. Also, it is possible to draw inference about critical points (i. e. maximum or minimum points) related with the derivative curves. Additionally, bootstrap methods have been used for estimating confidence intervals and speed computational techniques (binning techniques) have been implemented in seq2R.

Conferences presentations

2018   "An R package for inference and prediction in an illness-death model", with L. Meira-Machado. 33rd International Workshop on Statistical Modelling (IWSM2018), Bristol, England.

2018   "An R package for determining groups in multiple survival curves", with N. M. Villanueva and L. Meira-Machado. 33rd International Workshop on Statistical Modelling (IWSM2018), Bristol, England.

2018   "survidm: Inference and prediction in an Illness-Death Multi-State Model", with L. Meira-Machado. European R Users Meeting (eRum2018), Budapest, Hungary.

2018   "Finding groups in time-to-event data by means of the clustcurv package", with N. M. Villanueva and L. Meira-Machado. European R Users Meeting (eRum2018), Budapest, Hungary.

2017   "A method for determining groups of multiple survival curves", with N. M. Villanueva and L. Meira-Machado. XXIII Conference of Statistical Portuguese Society (SPE2017), Lisboa, Portugal.

2017   "Estimation of the conditional survival function in breast cancer patients using R: the condSURV package". I Annual Meeting CINBIO (The Biomedical Research Centre), Vigo, Spain.

2017   "A new approach to identify groups of survival curves using colon cancer data", with N. M. Villanueva and L. Meira-Machado. I Annual Meeting CINBIO (The Biomedical Research Centre), Vigo, Spain.

2017   "Conditional survival analysis of patients with colon cancer using the R package condSURV", with L. Meira-Machado. I Annual Meeting CINBIO (The Biomedical Research Centre), Vigo, Spain.

2017   "condSURV: Estimation of the conditional survival function for ordered multivariate failure time data in R", with L. Meira-Machado. One-Day Workshop on Survival Analysis (WSA2017), Lisboa, Portugal.

2016   "Una aproximación para determinar grupos de múltiples curvas de regresión. Aplicación al estudio de la geometría de un túnel", with N. M. Villanueva, C. Ordóñez and J. Roca-Pardiñas. II Encuentro Galaico-Portugués de Biometría BIOAPP2016, Santiago de Compostela, España.

2016   "Nonparametric estimation of the survival function for ordered multivariate failure time data: A comparative study", Statistical Workshop, Department of Statistics and O. R., SiDOR Research Group, University of Vigo, Vigo, Spain.

2015   "Estimação da Função de Sobrevivência em dados de eventos recorrentes com censura pela direita", with L. Meira-Machado and A. Gonçalves. XXII Congresso da Sociedade Portuguesa de Estatística SPE2015, Olhão, Portugal.

2015   "Nonparametric estimation of the survival function for ordered multivariate failure time data: a comparative study", with L. Meira-Machado and A. Gonçalves. 30th International Workshop on Statistical Modelling IWSM'30, Linz, Austria.

2015   "Transcranial optical monitoring of cerebral hemodynamics during early hours after ischemic stroke and its relationship to three month outcome", with I. Blanco, P. Zirak, C. Cregori, R. Marín-Bueno, I. S. Mochales, J. Marti-Fabregas, T. Durduran and R. Delgado-Mederos. XXVII International Symposium on Cerebral Blood Flow, Metabolism and Function & XII International Conference on Quantification of Brain Function with PET, Vancouver, Canada.

2014   "NPRegfast: factor-by-curve interaction models in R", Workshop on Statistics and Applications, Centre of Mathematics, University of Minho, Portugal.

2014   "Spawning habitat selection by Octopus vulgaris: New information for a more suitable management of

this resource", with A. Guerra, J. Hernández-Urcera, M. E. Garci, M. Regueira, A. F. González, M. Cabanellas-Reboredo, M. Calvo-Manazza and B. Morales-Nin. ICES Annual Science Conference, A Coruña, Spain.

2014 "Detecting critical points of regression curves. An application to the management of aquatic living resources", with N. M. Villanueva and J. Roca-Pardiñas. The R User Conference 2014 (useR! 2014), UCLA, Los Angeles, USA.

2014 "seq2R: Analyzing compositional asymmetries in DNA", with N. M. Villanueva and J. Roca-Pardiñas. The R User Conference 2014 (useR! 2014), UCLA, Los Angeles, USA.

2014 "Bedside monitoring of cerebral blood flow in the hyper-acute phase of ischemic stroke", with P. Zirak, R. Delgado-Mederos, Igor Blanco, L. Dinia, David Carrera, I. S. Mochales, J. Marti-Fabregas and T. Durduran. Biomedical Optics (BIOMED) Conference, Miami, USA.

2013 "Selección de variables aplicada a la identificación de factores de riesgo de lesión en fútbol profesional", with M. C. Iglesias-Pérez, M. Martínez-González, L. Casáis-Martínez and J. Roca-Pardiñas. XI Congreso Galego de Estatística e Investigación de Operacións, A Coruña, Spain.

2013 "Cluster analysis of regression curves", with N. M. Villanueva and J. Roca-Pardiñas. XI Congreso Galego de Estatística e Investigación de Operacións, A Coruña, Spain.

2013 "Análisis clúster de curvas de regresión no paramétrica en recursos marinos", with N. M. Villanueva and J. Roca-Pardiñas. I Encontro Luso-Galaico de Biometría, Braga, Portugal.

2013 "Identificación de factores de riesgo de lesión el fútbol profesional", with M. C. Iglesias-Pérez, M. Martínez-González, L. Casáis-Martínez and J. Roca-Pardiñas. I Encontro Luso-Galaico de Biometría, Braga, Portugal.

2013 "NPRegfast: Inference methods in regression models including factor-by-curve", with N. M. Villanueva and J. Roca-Pardiñas. The R User Conference 2013 (useR! 2013), Albacete, Spain.

2013 "Variable selection algorithm implemented in FWDselect", with N. M. Villanueva and J. Roca-Pardiñas. The R User Conference 2013 (useR! 2013), Albacete, Spain.

2013 "seq2R: Detecting DNA compositional change points", with N. M. Villanueva and J. Roca-Pardiñas. The R User Conference 2013 (useR! 2013), Albacete, Spain.

2013 "Métodos estadísticos de selección de variables en modelos de regresión multivariantes. Aplicaciones en medioambiente y salud", with N. M. Villanueva and J. Roca-Pardiñas. Congreso de la Real Sociedad Matemática Española (RSME 2013), Santiago de Compostela, Spain.

2012 "Multivariate quantile regression based on Additive Models", with I. Martínez-Silva, N. M. Villanueva and J. Roca-Pardiñas. 5th International Conference of the ERCIM Working Group on Computing & Statistics, Oviedo, Spain.

2012 "Change points analysis in regression models", with N. M. Villanueva and J. Roca-Pardiñas. 5th International Conference of the ERCIM Working Group on Computing & Statistics, Oviedo, Spain.

2012 "seq2R: Detección de puntos de cambio en secuencias genómicas", with N. M. Villanueva and J. Roca-Pardiñas. IV Jornadas de Usuarios de R, Barcelona, Spain.

2012   "`FWDselect`: Variable selection in regression models", with N. M. Villanueva and J. Roca-Pardiñas. IV Jornadas de Usuarios de R, Barcelona, Spain.

2012   "Strand asymmetries in mitogenomes: toward detection of change points", with N. M. Villanueva and J. Roca-Pardiñas. 20th Computational Conference on Computational Statistics (COMPSTAT 2012), Limassol, Cyprus.

2012   "Selection algorithm in regression models. `FWDselect` package", with N. M. Villanueva and J. Roca-Pardiñas. 20th Computational Conference on Computational Statistics (COMPSTAT 2012), Limassol, Cyprus.

2012   "Predicting SO2 pollution incidents in the vicinity of a coal-fire power station using generalized aditive models and bootstrapping", with J. Roca-Pardiñas, C. Ordóñez and S. García-Cortés. Mathematical Modelling in Engineering & human Behaviour 2012 Conference, Valencia, Spain.

2012   "Detection of change points mitochondrial DNA", with N. M. Villanueva and J. Roca-Pardiñas. Bioinformatics Open Days, Braga, Portugal.

2011   "Un paquete de R para analizar interacciones factor por curva", with N. M. Villanueva and J. Roca-Pardiñas. III Jornadas de Usuarios de R, Madrid, Spain.

2011   "`NPRegFast`: analyzing factor-by-curve interactions", with N. M. Villanueva and J. Roca-Pardiñas. X Congreso Galego de Estatística e Investigación de Operacións, Pontevedra, Spain.

2011   "A forward stepwise algorithm to select variables in regression context", with N. M. Villanueva and J. Roca-Pardiñas. X Congreso Galego de Estatística e Investigación de Operacións, Pontevedra, Spain.

2011   "An R package for analyzing factor-by-curve interactions", with N. M. Villanueva and J. Roca-Pardiñas. International Conference of Numerical Analysis and Applied Mathematics (ICNAAM 2011), Halkidiki, Greece.

2011   "Selecting variables in regression models. A new approach to the prediction of time series of SO2", with N. M. Villanueva and J. Roca-Pardiñas. International Conference of Numerical Analysis and Applied Mathematics (ICNAAM 2011), Halkidiki, Greece.

2011   "A non parametric model for estimating an ideal size of capture for Ruditapes decussatus (native) and Ruditapes phillippinarum (introduced) bivalves on the northern coast of Spain (Cantabrian Sea). Considerations for fisheries management", with G. Bidegain, J. Roca-Pardiñas and J. A. Juanes. Symposium Estuaries and lagoons ecosystem trajectories, Bordeaux, France.

2011   "An alternative model for estimating the length-weight relationship of Ruditapes decussatus (native) and Ruditapes phillippinarum (introduced) bivalves on the northern coast of Spain ", with G. Bidegain, J. Roca-Pardiñas and J. A. Juanes. 6th Congress of European Malacological Societies, Vitoria, Spain.

2010   "Application of derivatives in the management of Pollicipes pollicipes (Gmelin, 1789) on the Atlantic coast of Galicia (NW Spain)", with J. Roca-Pardiñas. XXXII Congreso Nacional de Estadística e Investigación Operativa, A Coruña, Spain.

2010   "Estimación no paramétrica de la talla mínima de captura de Pollicipes pollicipes (Gmelin, 1789). Interacciones factor-por-curva", with J. Roca-Pardiñas. XVI Simposio Ibérico de Estudios de Biología Marina,

Alicante, Spain.

2009   "Diferenciación geográfica en la talla mínima de captura de Pollicipes Pollicipes (Gmelin, 1789) en la costa atlántica gallega. Interacciones factor-por-curva", with J. Roca-Pardiñas, V. Lustres-Pérez and E. Fernández-Pulpeiro. IX Congreso Galego de Estatística e Investigación de Operacións, Ourense, Spain.

2009   "Estimación de la talla mínima idónea de captura de Pollicipes pollicipes (Gmelin, 1789) en las costas atlánticas gallegas", with J. Roca-Pardiñas, M. Pazos-Pata, V. Lustres-Pérez, C. Cadarso-Suárez and E. Fernández-Pulpeiro. II International Symposium in Marine Sciences, Vigo, Spain.

2007   "Fijación de nuevos individuos de Pollicipes pollicipes (Gmelin, 1789) en las costas atlánticas gallegas", with V. Lustres-Pérez and E. Fernández-Pulpeiro. I Foro Iberoamericano de los Recursos Marinos y de la Acuicultura, O Grove (Pontevedra), Spain.

2006   "Gradiente dimensional de epibiontes a lo largo del cuerpo de Pollicipes pollicipes (Gmelin, 1789) en las costas atlánticas gallegas", with E. Brea-Bermejo, V. Lustres-Pérez, J. Souto-Derungs, M. Pazos-Pata and E. Fernández-Pulpeiro. IX Foro dos Recursos Mariños e da Acuicultura das Rías Galegas, O Grove (Pontevedra), Spain.

Invited research seminars

2019   "AI For Real World Problems: Aquaculture 4.0", VigoBrain Meetup, A Industriosa, Vigo.

2019   "ENGORDA 4.0: ENhancing the manaGement Of the aquacultuRe through Data Analysis", 2nd Madrid Women In Machine Learning and Data Science Meetup (WiMLDS Madrid), Boston Consulting Center, Madrid.

2016   "Nonparametric estimation of the survival function for ordered multivariate failure time data: A comparative study", Statistical Workshop, SiDOR Research Group, Department of Statistics and O. R., University of Vigo.

2013   "Testing critical points of regression curves. An application to the management of aquatic living resources", Department of Mathematics, Autonomous University of Barcelona.

2013   "Workshop on creation of packages and reports with R", Vicerrectorado de Alumnado, Docencia y Calidad, University of Vigo.

2013   "FWDselect: An R package for selecting variables in regression models" , Department of Statistics and O. R., University of Vigo.

2012   "Testing critical points of regression curves. An application to the management of aquatic living resources", Department of Statistics and O. R., University of Vigo.

2010   "Método para la estimación no paramétrica de la talla mínima de captura de Pollicipes pollicipes (Gmelin, 1789) en la costa atlántica de Galicia (N.O. España)", Department of Statistics and O. R., University of Vigo.

Research stays

Postdoctoral stays

2013-14   Department of Mathematics, Autonomous University of Barcelona, Spain.

Predoctoral stays

2012   Department of Mathematics and Applications, University of Minho, Portugal. Luis Meira Machado. Oct–Dec 2012.

2012   Department of Mine Exploitation and Exploration, University of Oviedo, Spain. Celestino Ordóñez. Sep 2012.

2007   University of Las Palmas, Boa Vista Island, Cape Green. Aug 2007.

2004   Observatoire Océanologique de Roscoff (Roscoff Marine Station), Université Pierre et Marie Curie, France. Aug 2004.

Teaching

2014-20   Department of Statistics and Operations Research, University of Vigo, Spain.

2013-14   Department of Mathematics, Autonomous University of Barcelona, Spain.

2010-13   Department of Statistics and Operations Research, University of Vigo, Spain.

2007-09   Department of Animal Biology, University of Santiago de Compostela, Spain.

Autonomous University of Barcelona

2013-14   Probability Calculus.B.Sc. in Applied Statistics.

2013-14   Simulation, Resampling and Applications.B.Sc. in Applied Statistics.

University of Vigo

2018-19   Mathematics: Algebra and Statistics. B.Sc. in Engineering in Industrial Technologies.

2018-19   Statistics. B.Sc. in Management and Business Administration.

2017-18   Statistics II. B.Sc. in Economics.

2017-18   Statistics. B.Sc. in Management and Business Administration.

2016-17   Statistics. B.Sc. in Management and Business Administration.

2016-17	Mathematics: Algebra and Statistics. B.Sc. in Engineering in Industrial Technologies.
2015-16	Statistics. B.Sc. in Management and Business Administration.
2015-16	Social Research Techniques. B.Sc. in Labor Relations and Human Resources.
2014-15	Informatics: Statistics. B.Sc. in Engineering of the Energy and Engineering of the Mineral Resources and Energy.
2014-15	Statistics: Statistics. B.Sc. in Management and Business Administration.
2014-15	Statistics. B.Sc. in Tourism.
2014-15	Mathematics: Algebra and Statistics. B.Sc. in Engineering in Industrial Technologies.
2012-13	Statistics. Statistics. B.Sc. in Management and Business Administration.
2012-13	Statistics. Statistics. B.Sc. in Consulting and Management of the Administration.
2012-13	Operational Statistical Techniques. B.Sc. in Management and Business Administration.
2011-12	Mathematics: Algebra and Statistics. B.Sc. in Engineering in Industrial Technologies.
2011-12	Mathematics: Algebra and Statistics. B.Sc. in Engineering in Mechanical Engineering.
2011-12	Mathematics: Algebra and Statistics. B.Sc. in Engineering in Industrial Organization.
2011-12	Statistics: Statistics. B.Sc. in Management and Business Administration.
2011-12	Statistics: Statistics. B.Sc. in Commerce.
2010-11	Statistical methods of the Engineering. B.Sc. in Engineering.
2010-11	Statistical methods for the Engineering. B.Sc. in Engineering.
2010-11	Models and statistical techniques for data analysis. B.Sc. in Biology.
2010-11	Informatics: Statistics. B.Sc. in Engineering of the Energy and Engineering of the Mineral Resources and Energy.

University of Santiago de Compostela

2008-09	Biological oceanography. B.Sc. in Biology.
2008-09	Water quality. Treatment quality. B.Sc. in Chemistry Engineering.
2007-09	Biology of inland waters. B.Sc. in Biology.
2007-09	General zoology. B.Sc. in Biology.

2007-08	Arthropods. B.Sc. in Biology.
2007-08	Invertebrates. B.Sc. in Biology.

Teaching capabilities

2017	Accredited by the ANECA - Spanish National Agency for Quality Assessment and Accreditation - as Associate Professor.
2012-13	Curso de Iniciación á Formación para a Docencia Universitaria (University Teaching Training Course), University of Vigo, Spain.
2004-05	Curso de Aptitud Pedagógica (Teacher Training Course), University of Santiago de Compostela, Spain.
2014-15	Positive Teacher Evaluation by University of Vigo, score: 4.06/5.
2011-12	Positive Teacher Evaluation by University of Vigo, score: 4.46/5.
2010-11	Positive Teacher Evaluation by University of Vigo, score: 4.27/5.

Patent and software registration

2012	NPRegfast, with N. M. Villanueva and J. Roca-Pardiñas. Regional office for the intellectual property, Galician Regional Government. (Reference numbers: 03/2012/1096 – VG083-12).

Thesis and Practices Advisor

2020	Supervisor of Master Thesis, Master in Statistical Techniques (USC, UVIGO, UDC). Student: Raquel Redondo Oubiña .
2020	Supervisor of external academic practices, BSc. in Telecommunication Engineering (UVIGO). Student: Eugenia Kuchumova.
2020	Supervisor of external academic practices, BSc. in Telecommunication Engineering (UVIGO). Student: Camilo Piñón Blanco.
2019	Supervisor of external academic practices, Master in Statistical Techniques (USC, UVIGO, UDC). Student: Cristian Marques Corrales.

Service to the profession

2019	Co-Founder WiMLDS Galicia - Women in Machine Learning & Data Science. URL: http://wimlds.org/about-the-galicia-team/

2017   MSc thesis committee member, University of Minho, Portugal.

2017   Organizing Committee of the I Annual Meeting CINBIO (The Biomedical Research Centre), Vigo, Spain. `http://cinbio.es/en/i-annual-meeting-cinbio/`

2017-   Member of the European Consortium for Informatics and Mathematics (ERCIM) working group CMStatistics (Computational and Methodological Statistics), `ERCIM-CMStatistics`.

2016   Panel moderator, II Portuguese-Galician Meeting of Biometry, Santiago de Compostela, Spain.

2016   PhD dissertation committee member, University of Vigo, Spain.

2015-   Member of the Biomedical Research Centre, University of Vigo (`CINBIO`).

2014-   Member of the Foundation for Open Access Statistics (`FOAS`).

2013   Organizing Committee of the I Portuguese-Galician Meeting of Biometry, Braga, Portugal. `http://biometria2013-en.weebly.com`

2013-   Reviewer of the Journal of Statistical Software, International Journal of Computer Mathematics, Aquaculture research.

2011-   Member of Red Española Matemática-Industria (math-in network).

2010-   Member of the Statistical Inference, Decision and Operations Research Group (`SiDOR`).

Courses / Advanced training

2020   "Fundamentos de xestión de proxectos con Project", Universidade de Vigo, Spain.

2018   "Fundamentals of Project Management", Fundación Empresa-Universidad Gallega (FEUGA), Spain.

2017   "Machine Learning Foundations: A Case Study Approach", University of Washington, USA.

2017   "Tensor Flow. CodeLab", given by Gemma Parreño (Data Science BBVA) and Santiago Saavedra (OpenShine), Madrid, Spain.

2017   "Big Data Coruña Workshop", Centro Investigacións en Tecnoloxías da Información e as Comunicacións (CITIC), University of A Coruña, Spain.

2017   "Introduction to the ROC curves", Vicerrectorado de Alumnado, Docencia y Calidad, University of Vigo, Spain.

2016   "Statistical Workshop", Grupo IO1 (SiDOR), University of Vigo, Spain.

2015   "Methodological and computational challenges in statistical research" (Statistical Workshop), Grupo IO1 (SiDOR), University of Vigo, Spain.

2013	"Introduction to Mixed Models" (given by Prof. María Durbán), Vicerrectorado de Alumnado, Docencia y Calidad, University of Vigo, Spain.
2013	"Workshop on creation of packages and reports with R", Vicerrectorado de Alumnado, Docencia y Calidad, University of Vigo, Spain.
2012	"Computing for data Analysis", Johns Hopkins Bloomberg School of Public Health, USA.
2012	"Multilevel models", School Advanced Mathematics del Institute of Mathematics, University of Santiago de Compostela (SAM-IMAT), Spain.
2011	"Basic statistics applied with R: R-Excel", SGAPEIO, Pontevedra, Spain.
2011	"Mathematical and computational challenges in biomedical research", i-Math in Santiago de Compostela, Spain.
2011	"Applied statistics in teaching with the R software", University of Vigo, Spain.
2010	"Bayesian Computing with INLA" (given by Prof. Harvard Rue), University of Santiago de Compostela, Spain.
2010	"International Day of Statistics", SGAPEIO, Santiago de Compostela, Spain.
2010	"II Conference on Statistics in Sports", Red Mathematica Consulting, University of Vigo, Spain.
2010	"Workshop on Strategic Data Analysis", i-Math, University of Santiago de Compostela, Spain.
2010	"Statistical analysis with R", Programa de Formación e Innovación Docente, University of Santiago de Compostela, Spain.
2009	"Workshop on Oceanography and Statistical and Computational Hydraulics", i-Math, University of Santiago de Compostela, Spain.
2008	"Introduction to Geographic Information Systems with ArcView", University of Santiago de Compostela, Spain.

Extra

2018	Laboral Risk Prevention Course, Formanor.
2007	Certificate of competency and seaman's book, Escola Oficial Nautico–Pesqueira, Ferrol, Spain.
2006	Scuba diving. 1 star, FEDAS.
	Celga 4, Galician Languages Certificate.