

FAC-SIMILE

☒ SELF CERTIFICATION

(Article 46 of DPR 445/2000)

☐ SELF EXECUTED AFFIDAVIT

(Art. 19, 38 and 47 of DPR 445/2000)

ANNEX B

The undersigned:

SURNAME González Vilas

(For woman indicate the maiden name)

NAME Luis

ITALIAN TAX

CODE _____ (if it is known)

PLACE OF BIRTH Vigo (Spain)

DATE OF BIRTH 11/07/1978

NATIONALITY

: Spanish

GENDER M/F M

CURRENTLY RESIDENT IN Spain

TELEPHONE (0034)678965544

EMAIL: luisgv@uvigo.es

under his/her responsibility and aware that false declarations will be persecuted by the Italian Law and special laws DECLARES that the Curriculum vitae et studiorum, with the information about the scientific production, herewith attached tells the truth.

CURRICULUM VITAE ET STUDIORUM

- Education and training (dates, Title of qualification awarded, principal subjects/occupational skills covered, name and type of organization providing education and training, Level in national or international classification)
- Work experiences (i.e. dates/occupation or position held/main activities and responsibilities/name and address of employer/type of business or sector / reference number)
- Personal skills and competences (languages, social skills and competences, organizational skills and competences, computer skills and competences)
- Publications: Papers, patents, technical reports, monographs, books etc
- Any other activities, task or assignment (dates, qualification awarded, principal subjects/occupational skills covered, name and type of organization providing education and training, Level in national or international classification)

Please add separate entries for each relevant course you have completed, starting from the most recent

Example:

Description

Date Reference number

Period: From to

Place and date Redondela, 26/08/2021

Signature





Luis González Vilas

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<https://www.researchgate.net/profile/Luis-Gonzalez-Vilas> |

<https://scholar.google.es/citations?user=Kc7sUTYAAAAJ&hl=es> |

<https://publons.com/researcher/3150550/luis-gonzalez-vilas>

About me: I am a post-doctoral researcher with background in oceanography, environmental sciences and remote sensing. My research interest lie in the development of innovative methods to study the relationships between ecological and/or biological processes and the environmental conditions on marine environments, using Earth Observation (EO) data, machine learning methods, ecological models and advanced statistical techniques.

● EDUCATION AND TRAINING

24/07/2013 – Facultad de Ciencias del Mar, Campus Lagoas-Marcosende, Vigo, Spain

DOCTOR POR LA UNIVERSIDAD DE VIGO (PH.D. FROM THE UNIVERSITY OF VIGO, APPLIED PHYSICS DEPARMENT) – University of Vigo

Thesis title (in Spanish): "Teledetección y técnicas de aprendizaje automático supervisado aplicadas a la predicción de abundancia de recursos pesqueros, discriminación de vertidos de hidrocarburos, estimación de clorofila y detección temprana de episodios de algas tóxicas"

In English: Remote sensing and machine learning methods applied to the prediction of fish abundance, oil spill discrimination, chlorophyll estimation and early detection of Harmful Algae Blooms)

Sobresaliente Cum Laude

01/09/2007 – 01/07/2008 – Facultad de Ciencias del Mar, Campus Lagoas-Marcosende, Vigo, Spain

MASTER INTERUNIVERSITARIO EN FÍSICA APLICADA POR LA UNIVERSIDAD DE VIGO (MSC IN APPLIED PHYSICS) – University of Vigo

01/09/2005 – 30/06/2006 – Facultad de Ciencias del Mar, Campus Lagoas-Marcosende, Vigo, Spain

CERTIFICADO DE APTITUD PEDAGÓGICA (CAP) [POSTGRADUATE CERTIFICATE IN EDUCATION] – University of Vigo

30/09/2002 – 15/03/2003 – School of Science & Engineering, Fulton Building, University of Dundee, Dundee, United Kingdom

MSC IN REMOTE SENSING, IMAGE PROCESSING AND APPLICATIONS – University of Dundee

01/09/2001 – 30/06/2003 – Facultad de Ciencias del Mar Campus Lagoas-Marcosende, Vigo, Spain

DIPLOMA DE ESTUDIOS AVANZADOS (DEA) (DIPLOMA OF ADVANCED STUDIES: APPLIED PHYSICS) – University of Vigo

01/09/1996 – 30/09/2001 – Facultad de Ciencias del Mar, Campus Lagoas-Marcosende, Vigo, Spain

LICENCIADO EN CIENCIAS DEL MAR (GRADUATE DEGREE [5-YEARS DEGREE] IN MARINE SCIENCES) – University of Vigo

Av. de Emilio Martínez Garrido, 17, Vigo, Spain

ADVANCED ENGLISH DEGREE (LEVEL B2) – Official School of Languages

Av. de Emilio Martínez Garrido, 17, Vigo, Spain

BASIC PORTUGUESE DEGREE (LEVEL A2) – Official School of Languages

Av. de Emilio Martínez Garrido, 17, Vigo, Spain

BASIC ITALIAN DEGREE (A2) – Official School of Languages

26/08/2021

● WORK EXPERIENCE

10/05/2018 – 31/03/2021 – Vigo, Spain

POST-DOCTORAL RESEARCHER – UNIVERSITY OF VIGO, APPLIED PHYSICS DEPARTMENT

Post-doctoral researcher in the H-2020 European project: Commercial service platform for user-relevant coastal water monitoring services based on Earth observation (CoastObs).

Main tasks: Development of map products derived from satellite images to monitor coastal water environments; article writing; project reporting; communication and dissemination activities (meetings and conferences).

29/04/2017 – 28/04/2018 – Vigo, Spain

POST-DOCTORAL FELLOWSHIP - YEAR 3 – UNIVERSITY OF VIGO, ECOLOGY AND ANIMAL BIOLOGY DEPARTMENT

Post-doctoral fellowship, year 3. Funding: Galician regional government (Xunta de Galicia). Plan galego de investigación, innovación e crecemento 2011-2015 (Plan I2C).

Main tasks: Development of a methodological approach to build real species distribution maps combining supervised learning techniques and habitat geographical data (ModestR project); article writing; project reporting; communication and dissemination activities (meeting and conferences)

25/06/2016 – 28/04/2017 – Roma, Italy

POST-DOCTORAL FELLOWSHIP - YEAR 2 – FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO), FISHERIES AND AQUACULTURE DEPARTMENT

Post-doctoral fellowship, year 2. Funding: Galician regional government (Xunta de Galicia). Plan galego de investigación, innovación e crecemento 2011-2015 (Plan I2C).

Main tasks: Develop of a new method to predict the invasion of marine species; ecological modeling; project reporting; article writing.

20/07/2015 – 24/06/2016 – Washington, D.C. , United States

POST-DOCTORAL FELLOWSHIP - YEAR 1 – NATIONAL MUSEUM OF NATURAL HISTORY – SMITHSONIAN INSTITUTION, DIVISION OF FISHES

Post-doctoral fellowship, year 1. Funding: Galician regional government (Xunta de Galicia). Plan galego de investigación, innovación e crecemento 2011-2015 (Plan I2C).

Main tasks: Development of a global geographical database of freshwater habitats; ecological modeling; project reporting; article writing.

15/09/2013 – 28/04/2015 – Vigo, Spain

POST-DOCTORAL RESEARCHER – FUNDACION EMPRESA-UNIVERSIDAD GALLEGA (FEUGA)

Participation in ModestR project (<http://www.ipez.es/ModestR/>), supervised by Dr. Cástor Guisande González.

Tasks: Statistical analysis; geospatial data visualization and analysis; database generation; development of species distribution models; article writing; species dicommunication and dissemination activities (meetings, conferences)

01/05/2003 – 15/11/2012 – Vigo, Spain

UNIVERSITY RESEARCH ASSISTANT – UNIVERSITY OF VIGO, APPLIED PHYSICS DEPARTMENT

Funded-project researcher in the following projects (supervised by Dr. Jesus M. Torres Palenzuela):

01/05/2003 – 31/07/2003; 01/11/2003 – 30/04/2004: *Sistema predictivo de esfuerzos pesqueros para la flota artesanal gallega*

16/05/2004–15/12/2006; 01/02/2007–31/05/2007: *Técnicas de detección, seguimiento y predicción de la dinámica de vertidos de hidrocarburos en aguas oceánicas (CONTINMAR)*


26/08/2021

01/01/2007–31/01/2007: *Aplicación de teledetección, inteligencia artificial y SIG al estudio de la variabilidad en la distribución de especies comerciales para la flota gallega en el ATSW (SIGMALVINAS)*

01/10/2007–31/12/2008: *Investigación industrial para la optimización de la eficiencia energética en la flota pesquera*

01/01/2009–31/08/2010: *HNS, oil and inert pollution: Trajectory modelling and monitoring (DRIFTER)*

01/04/2011–15/11/2012: *Estudo da circulación de fondo en augas de Mauritania*

Collaboration with other research projects

Tasks: Statistical analysis; geospatial data visualization and analysis; database generation; remote sensing processing and analysis; development of algorithms and machine learning models; article writing; project reporting; communication and dissemination activities (meetings, conferences)

● SUPERVISION OF PH.D. THESIS

12/2020

Métodos numéricos de aprendizaje automático supervisado aplicados a la predicción de floraciones masivas de *Pseudo-nitzschia* spp. en las Rías Baixas gallegas

English title: Supervised machine learning numerical methods applied to the prediction of massive blooms of *Pseudonitzschia* spp. in the Galician Rías Baixas

Author: Francisco Miguel Bellas Aláez

Supervisors: **Luis González Vilas**, Jesus. M. Torres Palenzuela

Institution: Applied Physics Department, University of Vigo

Defense date: 6 May 2021

CURRENT

Factors affecting species richness of marine fishes on a global scale

Author: Elisa Perez Costas

Supervisors: **Luis González Vilas**, Castor Guisande González

Institution: Ecology and Animal Biology Department, University of Vigo

Defense date: Pending

● GRANT AND FELLOWSHIPS

30/09/2002 – 15/03/2003

ERASMUS Post-graduate Grant

Department of Remote Sensing, Faculty of Science & Engineering, University of Dundee

29/04/2015 – 30/04/2018

Post-doctoral Fellowship (Xunta de Galicia)

3-year post-doctoral fellowship, including a stay and a return phase:

Year 1: Smithsonian Institution (Washington, D.C., USA)

Year 2: Food and Agriculture Organization of the United Nations (FAO, Rome, Italy)

Year 3: University of Vigo (Vigo, Spain)


26/08/2021

● PROJECTS

10/05/2018 – 30/03/2021

Commercial service platform for user-relevant coastal water monitoring services based on Earth observation (CoastObs)

Position: Post-doctoral researcher

Funding: European Union's Horizon 2020 research and innovation programme (grant agreement No 776348)

Main contributions: Development of remote sensing innovative and higher-level products to monitor coastal water environments.

15/09/2013 – 28/04/2018

ModestR (Software for species distribution data management)

Position: Post-doctoral researcher

Funding: Private (ENDESA) / Post-doctoral fellowship (Galicia Regional Government)

Main contributions: Generation of global geographical databases; development of new approaches for species distribution modelling.

04/2011 – 11/2012

Estudio de la circulación de fondo en aguas de Mauritania

Study of bottom circulation in Mauritania waters

Position: Researcher

Funding: INCITE program (Galician government)

Main contributions: Development of neural networks for predicting the abundance of commercial fisheries in Mauritania fishing area. Development of a visualization and communication tool installed on-board commercial fishing vessels.

01/2009 – 08/2010

HNS, oil and inert pollution: Trajectory modeling and monitoring (DRIFTER)

Position: Researcher

Funding: European Union (EU) under AMPERA program (European Coordination Action to foster prevention and best response to accidental marine pollution)

Main contributions: Improvement of the oil spill detection system from ASAR images on the Galician coastal area. Oceanographic interpretation of ASAR full resolution images.

10/2007 – 12/2008

Investigación industrial para la optimización de la eficiencia energética de la flota pesquera

Industrial research for the optimization of the energy efficiency in the fishing fleet

Position: Researcher

Funding: Ministry of commerce, industry, cooperative and tourism of Spain. Energy National Program.

Main contributions: Development of models for route optimization based on environmental data. Implementation of a software tool installed on-board commercial fishing vessels to visualize environmental data and routes.

Aplicación de teledetección, inteligencia artificial y SIG al estudio de la variabilidad en la distribución de especies comerciales para la flota gallega en el ATSW (SIGMALVINAS)

Using remote sensing, artificial intelligence and GIS in order to study the variability in the distribution of commercial species for the Galician fleet in ATSW.

Position: Researcher

Funding: PGIDIT program 2005 (Galician government).

Main contributions: Statistical analysis and visualization of fisheries and environmental data using GIS techniques. Development of neural networks for predicting the abundance of commercial fisheries in south-west Atlantic fishing area.


26/08/2021

05/2004 – 12/2006

Técnicas de detección, seguimiento y predicción de la dinámica de vertidos de hidrocarburos en aguas oceánica (CONTINMAR)

Oil spill detection, monitoring and forecasting techniques in oceanic waters

Position: Researcher

Funding: Ministry of Science and Technology of Spain (VEM2003-20578-C08-03).

Main contributions: Development of an oil spill detection system from ASAR images on the Galician coastal area, with algorithms for segmentation, characterization and classification (MLP and SMV).

05/2003 – 07/2003

Sistema predictivo de esfuerzos pesqueros para la flota artesanal gallega

Forecasting system of fisheries effort for the Galician craft fleet

Position: Researcher

Funding: Xunta de Galicia (Galician government).

Main Contributions: Statistical analysis and visualization of fisheries and environmental data using GIS techniques.

01/2011 – 12/2013

Aprovechamiento energético de biomasa en recursos hídricos degradados ricos en microalgas (Enerbioalgae).

Energy exploitation of biomass in nutrient-rich waste waters

Position: Collaboration

Funding: Sudoe Interreg IV-b (EU-ERDF)

Main contributions: Development of algorithms for the retrieval of biomass concentration and lipid percentage from fluorescence spectral signatures.

01/2009 – 12/2010

Detection and Evaluation of Oil Spills by Optical Methods (DEOSOM)

Position: Collaboration

Funding: European Union (EU) under AMPERA program (European Coordination Action to foster prevention and best response to accidental marine pollution), ERA-NET action.

Main contributions: Analysis of Spectral Fluorescence Signature (SFS)

07/2007

SST and colour in Ria de Vigo water (RIAWATER)

Position: Collaboration

Collaboration with European Facility for Airborne Research (EUFAR).

Main contributions: Processing and analysis of CASI and ATM images.

01/2007 – 12/2010

Investigación industrial para la optimización de la eficiencia energética en la flota pesquera: arrastre del Atlántico Sudoccidental, arrastre de Mauritania y palangre de superficie del Océano Atlántico

Position: Collaboration

Funding: INCITE program 2007 - 2010 (Galician government).

Main contributions: Development of models for route optimization based on environmental data

01/2006 – 12/2009

ECOsyst system approach to Sustainable Management of the Marine Environment and its living Resources (ECOSUMMER).

Position: Collaboration

Funding: European Commission Marie Curie Actions (project 20501)

Main contributions: Development and application of algorithms for the retrieval of chlorophyll-a concentration from MERIS images on the Galician coast.


26/08/2021

Position: Collaboration

Funding: Ministry of Science and Technology of Spain (REN2003-09796-C02-02).

Main Contributions: Land cover classification from LANDSAT images

● PUBLICATIONS

Machine Learning Methods Applied to the Prediction of *Pseudo-nitzschia* spp. Blooms in the Galician Rias Baixas (NW Spain)

<https://doi.org/10.3390/ijgi10040199> – 2021

Bellas Aláez, F.M.; Torres Palenzuela, J.M.; Spyarakos, E.; **González Vilas, L.** (2021) Machine Learning Methods Applied to the Prediction of *Pseudo-nitzschia* spp. Blooms in the Galician Rias Baixas (NW Spain) ISPRS International Journal of Geo-Information, 10, 199

Predicting the effects of climate change on future freshwater fish diversity at global scale

<https://natureconservation.pensoft.net/article/58997/> – 2021

Manjarrés-Hernández, A.; Guisande, C.; García-Roselló, E.; Heine, J.; Pelayo-Villamil, P.; Pérez-Costas, E.; **González Vilas, L. et al.** (2021) Predicting the effects of climate change on future freshwater fish diversity at global scale. Nature Conservation, 43, 1-24

Diversity Dimensions of Freshwater Fish Species around the World

<https://doi.org/10.4236/ijgis.2021.131001> – 2021

Granado-Lorenzo, C.; Guisande, C.; Pelayo-Villamil, P.; Manjarrés-Hernández, A.; García-Roselló, E.; Heine, J.; Pérez-Costas, E.; **González Vilas, L. et al.** (2021) Diversity Dimensions of Freshwater Fish Species around the World. Journal of Geographic Information System, 13 (1).

Potential Application of the New Sentinel Satellites for Monitoring of Harmful Algal Blooms in the Galician Aquaculture

<https://doi.org/10.1007/s41208-019-00180-0> – 2020

Torres Palenzuela, J.; **González Vilas, L.**; Bellas Aláez, F.M.; Pazos, Y. (2020) Potential Application of the New Sentinel Satellites for Monitoring of Harmful Algal Blooms in the Galician Aquaculture. Thalassas: An International Journal of Marine Sciences, 36 (1), 85-93.

Moving towards global satellite based products for monitoring of inland and coastal waters. Regional examples from Europe and South America

<https://doi.org/10.1109/LAGIRS48042.2020.9165653> – 2020

Spyrakos, E.; Hunter P.; Simis S.; Neil C.; Riddick, C.; Wang, S.; Varley, A.; Blake, M.; Groom, S.; Palenzuela, J.T., **Gonzalez Vilas L.**, Cardenas C., Frangopulos M., Vega X.A., Iriarte J.L. and Tyler A. (2020) Moving towards global satellite based products for monitoring of inland and coastal waters. Regional examples from Europe and South America. 2020 IEEE Latin American GRSS and ISPRS Remote Sensing Conference, LAGIRS 2020. IEEE Latin American GRSS & ISPRS Remote Sensing Conference (LAGIRS 2020), Santiago, Chile, 22.03.2020-26.03.2020. Piscataway, NJ, USA: Institute of Electrical and Electronics Engineers Inc. pp. 363-368.

MEDLEM database, a data collection on large Elasmobranchs in the Mediterranean and Black seas. Mediterranean Marine Science

<https://doi.org/10.12681/mms.21148> – 2020

Mancusi, C. *et al.* (2020) MEDLEM database, a data collection on large Elasmobranchs in the Mediterranean and Black seas. Mediterranean Marine Science, 21(2), 276-288

NOO3D: A procedure to perform 3D species distribution models

<https://doi.org/10.1016/j.ecoinf.2019.101008> – 2019

Pérez-Costas, E.; Guisande, C.; **González Vilas, L.**; García-Roselló, E.; Heine, J.; González-Dacosta, J.; Lobo, J.M. (2019) NOO3D: A procedure to perform 3D species distribution models. *Ecological Informatics*, 54, 101008.

A simple method to estimate the probable distribution of species

<https://doi.org/10.1111/ecog.04563> – 2019

García-Roselló, E.; Guisande, C.; **González Vilas, L.**; González-Dacosta, J.; Heine, J.; Pérez-Costas E.; Lobo, J.M. (2019) A simple method to estimate the probable distribution of species. *Ecography*, 42: 1613–1622

Pseudo-nitzschia Blooms in a Coastal Upwelling System: Remote Sensing Detection, Toxicity and Environmental Variables

<https://doi.org/10.3390/w11091954> – 2019

Torres Palenzuela, J.M.; **González Vilas, L.**; Bellas, F.M.; Garet, E.; González-Fernández, Á.; Spyarakos, E. (2019) *Pseudo-nitzschia* Blooms in a Coastal Upwelling System: Remote Sensing Detection, Toxicity and Environmental Variables. *Water*, 11, 1954.

SINENVAP: An algorithm that employs kriging to identify optimal spatial interpolation models in polygons

<https://doi.org/10.1016/j.ecoinf.2019.100975> – 2019

Guisande, C.; Rueda-Quecho A.J.; Rangel-Silva F.A. Heine; García Roselló, E.; Gonzalez Dacosta, J.; **González Vilas, L.**; Pelayo-Villamil, P. (2019) SINENVAP: An algorithm that employs kriging to identify optimal spatial interpolation models in polygons. *Ecological Informatics*, 53, 100975.

Forecasting the ongoing invasion of *Lagocephalus sceleratus* in the Mediterranean Sea

<https://doi.org/10.1016/j.ecolmodel.2018.01.007> – 2018

Coro, G; **Gonzalez Vilas, L.**; Magliozzi, C.; Ellenbroek, A.; Scarponi, P.; Pagano, P. (2018) Forecasting the ongoing invasion of *Lagocephalus sceleratus* in the Mediterranean Sea. *Ecological Modelling*, 371: 37–49.

KnowBR: An application to map the geographical variation of survey effort and identify well-surveyed areas from biodiversity databases

<https://doi.org/10.1016/j.ecolind.2018.03.077> – 2018

Lobo, J.M.; Hortal, J.; Yela, J.L.; Millán, A.; Sánchez-Fernández D.; García-Roselló E.; González-Dacosta J.; Heine J.; **González Vilas L.** and Guisande C. (2018) KnowBR: an application to map the geographical variation of survey effort and identify well-surveyed areas from biodiversity databases. *Ecological Indicators* 91, 241–248.

Completeness of national freshwater fish species inventories around the world

<https://doi.org/10.1007/s10531-018-1630-y> – 2018

Pelayo-Villamil, P.; Guisande, C.; Manjarrés-Hernández, A.; *et al.* (2018) Completeness of national freshwater fish species inventories around the world. *Biodiversity Conservation*, 27, 3807–3817.

A procedure to assess the spatial variability in the importance of abiotic factors affecting distributions: the case of world freshwater fishes

<https://doi.org/10.1093/cz/zox063> – 2018

Manjarrés-Hernández; A.M.; Guisande, C.; García-Roselló, E.; Pelayo-Villamil, P.; González-Dacosta, J.; Heine, J.; **González Vilas, L.**; Granado-Lorencio, C.; Duque, S.R. and Lobo, J.M. (2018) A procedure to assess the spatial variability in the importance of abiotic factors affecting distributions: the case of world freshwater fishes. *Current Zoology*, 64 (5), 549–557.

DER: An algorithm for comparing species diversity between assemblages

<https://doi.org/10.1016/j.ecolind.2017.05.049> – 2017

C. Guisande, C.; Heine, J.; García-Roselló, E.; González-Dacosta, J.; **González Vilas, L.**; Pérez-Schofield, B.J. (2017) DER: An algorithm for comparing species diversity between assemblages. *Ecological Indicators*, 81, 41-46.

SPEDInstabR: an algorithm based on a fluctuation index for selecting predictors in species distribution modeling

<https://doi.org/10.1016/j.ecoinf.2016.11.004> – 2017

Guisande, C.; García-Roselló, E.; Heine, J.; González-Dacosta, J.; **González Vilas, L.**; García Pérez B.J. and Lobo, J.M. (2017) SPEDInstabR: an algorithm based on a fluctuation index for selecting predictors in species distribution modeling. *Ecological Informatics*, 37, 18-23.

Geospatial data of freshwater habitats for macroecological studies: an example with freshwater fishes

<https://doi.org/10.1080/13658816.2015.1072629> – 2016

González Vilas, L.; Guisande, C.; Vari, R.P.; Pelayo-Villamil, P.; Manjarrés-Hernández, A.; García-Roselló, E.; *et al.* (2016) Geospatial data of freshwater habitats for macroecological studies: an example with freshwater fishes. *International Journal of Geographical Information Science*, 30: 126–141.

VARSEDIG: an algorithm for morphometric characters selection and statistical validation in morphological taxonomy

<https://doi.org/10.11646/zootaxa.4162.3.10> – 2016

Guisande, C.; Vari, R.P.; Heine, J.; García-Roselló, E.; González-Dacosta, J.; García Pérez-Schofield, B.J.; **Gonzalez Vilas, L.** and Pelayo-Villamil, P. (2016) VARSEDIG: an algorithm for morphometric characters selection and statistical validation in morphological taxonomy. *Zootaxa*, 4162 (3), 571-580.

Can we derive macroecological patterns from primary GBIF data?

<https://doi.org/10.1111/geb.12260> – 2015

García-Roselló, E.; Guisande, C.; Manjarrés-Hernandez, A.; González-Dacosta, J.; Heine, J.; Pelayo-Villamil, P.; **González Vilas, L.**; Vari, R.P.; Vaamonde, A.; Granado-Lorencio, C.; Lobo, J.M. (2015) Can we derive macroecological patterns from primary GBIF data? *Global Ecology and Biogeography*, 24: 335–347.

FactorsR: an RWizard application for identifying the most likely causal factors in controlling species richness

2015

Guisande, C.; Heine, J.; García-Roselló, E.; Gonzalez-Dacosta, J.; Garcia Perez-Schofield, B.J.; **Gonzalez Vilas, L.**; Vaamonde A. and Lobo, J.M. (2015) FactorsR: an RWizard application for identifying the most likely causal factors in controlling species richness. *Diversity*, 7(5), 385-396.

Global diversity patterns of freshwater fishes – potential victims of their own success

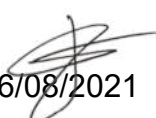
<https://doi.org/10.1111/ddi.12271> – 2015

Pelayo-Villamil, P.; Guisande, C.; Vari, R.P.; Manjarrés-Hernández, A.; García-Roselló, E.; González-Dacosta, J.; Heine, J.; **González Vilas, L.** et al. (2015) Global diversity patterns of freshwater fishes – potential victims of their own success. *Diversity and Distributions*, 21(3), 345-356.

Support Vector Machine-based method for predicting *Pseudo-nitzschia* spp. blooms in coastal waters (Galician rias, NW Spain)

<https://doi.org/10.1016/j.pocean.2014.03.003> – 2014

González Vilas, L.; Spyarakos, E.; Torres Palenzuela, J.M.; Pazos, Y. (2014) Support Vector Machine-based method for predicting *Pseudo-nitzschia* spp. blooms in coastal waters (Galician rias, NW Spain). *Progress in Oceanography*, 124, 66–77.


26/08/2021

<https://doi.org/10.1111/2041-210X.12209> – 2014

García-Roselló E.; Guisande, C.; Heine J.; Pelayo-Villamil P.; Manjarrés-Hernández A.; **González Vilas L.**; González-Dacosta J.; Vaamonde A.; Granado-Lorencio C. (2014) Using ModestR to download, import and clean species distribution records. *Methods in Ecology and Evolution*, 5, 708–713.

Neural network estimation of chlorophyll a from MERIS full resolution data for the coastal waters of Galician rias (NW Spain)

<https://doi.org/10.1016/j.rse.2010.09.021> – 2011

González Vilas, L.; Spyarakos, E.; Torres Palenzuela, J.M. (2011) Neural network estimation of chlorophyll *a* from MERIS full resolution data for the coastal waters of Galician rias (NW Spain). *Remote Sensing of Environment*, 115, 524–535.

Remote sensing chlorophyll a of optically complex waters (rias Baixas, NW Spain): Application of a regionally specific chlorophyll a algorithm for MERIS full resolution data during an upwelling cycle

<https://doi.org/10.1016/j.rse.2011.05.008> – 2011

Spyrakos, E.; **González Vilas, L.**; Torres Palenzuela, J.M.; Barton, E.D. (2011) Remote sensing chlorophyll *a* of optically complex waters (rias Baixas, NW Spain): Application of a regionally specific chlorophyll *a* algorithm for MERIS full resolution data during an upwelling cycle. *Remote Sensing of Environment*, 115, 2471–2485.

Analysis of GIS and neural networks as powerful tools to forecast the abundance of commercial species of fishery interest in the Southwest Atlantic

2010

Torres Palenzuela, J.; **González Vilas, L.**; Darriba Estévez, M. and Martínez Iglesias, G. (2010) Analysis of GIS and neural networks as powerful tools to forecast the abundance of commercial species of fishery interest in the Southwest Atlantic. *Proceedings of 4th symposium in GIS/Spatial Analyses in Fishery and Aquatic Sciences*, 4, 139-160.

Discriminación automática de vertidos de hidrocarburos a partir de imágenes ASAR utilizando una máquina de vectores soporte (SVM).

<http://www.aet.org.es/?q=revista33-5> – 2010

González Vilas, L.; Torres, J.M.; Yarovenko N. y Martín J. Discriminación automática de vertidos de hidrocarburos a partir de imágenes ASAR utilizando una máquina de vectores soporte (SVM) (2010). *Revista de la Asociación Española de Teledetección*, 33, 17-28.

Improving oil slick detection by SAR imagery using ancillary data

<https://ieeexplore.ieee.org/document/4374853> – 2007

González Vilas, L. and Torres Palenzuela J.M. (2007) Improving oil slick detection by SAR imagery using ancillary data. *Proceedings of 2007 IEEE International Symposium on Industrial Electronics*, 1657-1665.

Use of ASAR images to study the evolution of the Prestige oil spill off the Galician coast

<https://doi.org/10.1080/01431160512331314038> – 2006

Torres Palenzuela, J.M.; **González Vilas L.** and Sacau Cuadrado M. (2006) Use of ASAR images to study the evolution of the Prestige oil spill off the Galician coast. *International Journal of Remote Sensing*, 27(10), 1931-1950.

Utilización de datos de ENVISAT para la detección de vertidos de hidrocarburos

<http://www.aet.org.es/?q=revista25-11> – 2006

González Vilas, L.; Torres, J.M.; Martínez-Iglesias, G.; Mosquera A. y Corchado J.M. (2006) Utilización de datos de ENVISAT para la detección de vertidos de hidrocarburos. *Revista de la Asociación Española de Teledetección, Número Especial en Oceanografía y Teledetección*, 25, 55-59.

Estudio de una floración tóxica de *Pseudonitzschia* spp. en las costas de Galicia usando una imagen MERIS y datos in situ

<http://www.aet.org.es/?q=revista25-15> – 2006

Mosquera, A.; Torres, J.M.; **González Vilas, L.**; Martínez-Iglesias G. y Pazos Y. (2006). Estudio de una floración tóxica de *Pseudonitzschia* spp. en las costas de Galicia usando una imagen MERIS y datos in situ. Revista de la Asociación Española de Teledetección, Número Especial en Oceanografía y Teledetección, 25, 75-79.

Aplicación de un sistema de información geográfica y datos de satélite en el estudio de mamíferos marinos en la costa gallega

<http://www.aet.org.es/?q=revista25-16> – 2006

Martínez-Iglesias, G.; Torres, J.M.; **González Vilas, L.**; Mosquera A. y Lago R. (2006) Aplicación de un sistema de información geográfica y datos de satélite en el estudio de mamíferos marinos en la costa gallega. Revista de la Asociación Española de Teledetección, Número Especial en Oceanografía y Teledetección, 25, pp. 80-84.

Utilización de imágenes MERIS en la detección de blooms de *Pseudonitzschia* spp. en costas de Galicia

<http://www.aet.org.es/?q=revista24-13> – 2005

Torres Palenzuela, J. M.; Lago, R.; Martínez, G. and **González Vilas L.** (2005). Utilización de imágenes MERIS en la detección de blooms de *Pseudonitzschia* spp. en costas de Galicia. Revista de la Asociación Española de Teledetección, 24, pp. 73-77.

● CONFERENCE PROCEEDINGS

2013

Remote sensing of harmful algal events in optically complex waters using regionally specific neural network-based algorithms for MERIS data

L. Gonzalez Vilas, M. Castro Fernandez, E. Spyarakos and J. Torres Palenzuela. Proceedings of the First International Conference on Remote Sensing and Geoinformation of Environment (RSCy2013).

2012

Synergy between MERIS, AATSR and ASAR for the detection of a high phytoplankton biomass episode related to an upwelling event

Luis González Vilas, Evangelos Spyarakos, Nina Yarovenko and Jesús M. Torres Palenzuela. Proceedings of the 3rd MERIS/(A)ATSR & OCLI-SLSTR Preparatory Workshop.

2012

Long-term distribution of chlorophyll a from MERIS FR data using locally adjusted algorithms (NW Spain)

Jesús M. Torres Palenzuela, **Luis González Vilas**, Evangelos Spyarakos and Miguel Castro Fernández. Proceeding of the 3rd MERIS/(A)ATSR & OCLI-SLSTR Preparatory Workshop.

2012

MERIS observations of Pseudo-nitzschia blooms in the galician rias (NW, Spain)

Evangelos Spyarakos, **Luis González Vilas**, MC. Martin de la Cruz, Jesús Torres Palenzuela. Proceedings of the 3rd MERIS/(A)ATSR & OCLI-SLSTR Preparatory Workshop.

2011

Interpretación oceanográfica de imágenes ASAR de alta resolución de la costa gallega utilizando datos auxiliares

Luis González Vilas, Nina Yarovenko, Samuel Curos Mata y Jesus M. Torres Palenzuela. Teledetección: Bosques y Cambio Climático. XIV Congreso de la Asociación Española de Teledetección. Editores: Carmen Recondo González, Enrique Pendás Molina. pp. 596-600. 2011.

26/08/2021

2011

Aplicación de algoritmos a partir de imágenes MERIS FR de índice de clorofila específicos para la costa gallega durante un ciclo de afloramiento

E. Spyarakos, L. González Vilas, J. M. Torres Palenzuela¹ y E. D. Barton. Teledetección: Bosques y Cambio Climático. XIV Congreso de la Asociación Española de Teledetección. Editores: Carmen Recondo González, Enrique Pendás Molina. pp. 613-616.

2008

Use of airborne and field data to validate Sea Surface Temperatura data from MODIS and ATSR in the Ria of Vigo

Luis González Vilas, Ángela Mosquera Giménez, Marta Darriba-Estevez and Jesús Torres Palenzuela. Proceedings of the 2nd MERIS/(A)ATSR Workshop.

2008

Development of a neural network to retrieve chlorophyll concentrations from MERIS images in the Galician coastal waters

Ángela Mosquera Giménez, Marta Darriba-Estevez, **Luis González Vilas** and Jesús Torres Palenzuela. Proceedings of the 2nd MERIS/(A)ATSR Workshop.

2008

Utilización de teledetección para el estudio de zonas de sedimentación de peloides en las costas gallegas

Ángela Mosquera Giménez, Jesús M. Torres Palenzuela, **Luis González Vilas**, M^a Lourdes Mourelle. Investigaciones en el ámbito iberoamericano sobre peloides termales. Actas do I Congreso Iberoamericano de Peloides. pp. 223-235. Servicio de publicacións. Universidade de Vigo. Vigo. España.

2008

Estudio de patrones de sedimentación de peloides en el cauce del rio Miño por teledetección. Investigaciones en el ámbito iberoamericano sobre peloides termales

Jesús M. Torres Palenzuela, **Luis González Vilas**, Ángela Mosquera Giménez. Actas do I Congreso Iberoamericano de Peloides. pp. 253-261. Servicio de publicacións. Universidade de Vigo. Vigo. España.

2005

Detection and monitoring of the Prestige oil spill using Envisat ASAR images

L. González Vilas and J.M. Torres Palenzuela. Proceedings of the 24th Symposium of the European Association of Remote Sensing Laboratories. New Strategies for European Remote Sensing, pp. 489-497. Edited by Marinko Olui. Millpress, Rotterdam. 2005.

2005

Correlation between MERIS and In-situ Data for Study of Pseudo-nitzschia spp toxic blooms in Galician coastal areas

Jesús M. Torres Palenzuela, **L. González Vilas** y A. Mosquera Jiménez. Proceedings of the 24th Symposium of the European Association of Remote Sensing Laboratories. New Strategies for European Remote Sensing, pp. 497-507. Edited by Marinko Olui.. Millpress, Rotterdam. 2005

2005

Sistema de detección y seguimiento de vertidos accidentales marinos utilizando técnicas de teledetección en la costa gallega

Luis González Vilas, J.M. Torres, G. Martinez y R. Lago. XI Congreso Nacional de Teledetección AET 2005.

26/08/2021

2005

Utilización de las imágenes MERIS en la detección de blooms de *Pseudo-nitzschia* spp. en costas de Galicia

Jesús Torres, R. Lago, G. Martínez y **L. González Vilas**. XI Congreso Nacional de Teledetección AET 2005.

2005

Aplicación de imágenes térmicas y de color al estudio de especies pelágicas en la costa de Galicia

G. Martínez, R. Vilela, **L. González Vilas** y J.M. Torres Palenzuela. XI Congreso Nacional de Teledetección AET 2005.

2004

Detection of *Pseudo-nitzschia* spp toxic blooms using MERIS images on the Galician coast

J.M. Torres Palenzuela, **L. González Vilas** and Á. Mosquera Jiménez. Proceedings of the 2004 Envisat & ERS Symposium.

2004

Using SAR images for detection of a surface poleward current off the west coast of the Iberian Peninsula

J.M. Torres Palenzuela and **L. González Vilas**. Proceedings of the 2004 Envisat & ERS Symposium.

● **CONTRIBUTION TO RESEARCH PROPOSALS**

2021

Innovative user-relevant satellite products for coastal and transitional waters

ESA Dragon-5 Cooperation Programme between Europe and China, Ocean and Coastal Zones

PI Europe: Dr. Spyros Evangelos, University of Stirling, UK.

PI China: Prof.. Junsheng Li, Aerospace Information Research Institute, Chinese Academy of Sciences, China.

2020

International cooperation to support sustainable & inclusive Blue Growth through Earth observation (InBlue)

European Union Call H2020-SPACE-2018-2020, DT-SPACE-06-EO-2019, Research and Innovation

Lead Institution: University of Stirling

● **BOOK CHAPTERS**

2009

Vertidos de hidrocarburos

Jesús M. Torres, **L. González Vilas**, G. Navarro y J. Pérez-Marrero. In: Oceanografía y Satélites, pp. 259-286. Editorial Tébar. Madrid. España.

2008

Ocean colour measured by remote sensing and applications

Jesús M. Torres, Ángela Mosquera and **Luis González Vilas**. In: Ocean remote sensing: recent techniques and applications, pp. 9-29. Research Signpost, Fort P.O., Trivandrum-695 023. Kerala, India.

● CONFERENCES AND SEMINARS

20/06/2018 – 22/06/2018 – Vigo (Spain)

VI International Symposium on Marine Science

Communications:

- Predicting the spread of the invasive pufferfish *Lagocephalus sceleratus* in the Mediterranean Sea (oral presentation)
- Temporal and spatial distribution of cetaceans in the Azores using ecological niche models (poster)

06/07/2014 – 11/07/2014 – Santander (Spain)

XVII Congreso de la Asociación Ibérica de Limnología

Communications:

- Cartografía de los sistemas acuáticos de agua dulce de Europa disponible en ModestR (oral presentation)

21/09/2011 – 23/09/2011 – Mieres (Spain).

XIV Congreso de la Asociación Española de Teledetección

Communications:

- Interpretación oceanográfica de imágenes ASAR de alta resolución de la costa gallega utilizando datos auxiliares (oral presentation).

15/06/2011 – Lisbon (Portugal)

International Workshop. Methods for oil spill evaluation.

Communications:

- Development of a Semiautomatic Detection System from ASAR FR images for the Galician Coastal Area (oral presentation).

20/09/2010 – 24/09/2010 – Nantes (France)

ICES Annual Science Conference (ASC) 2010.

Communications:

- Use of neural networks to forecast the abundance of Argentine hake in the Southwest Atlantic (oral presentation).
- Study of demersal fish distribution and environmental conditions in the Great Sole Bank using statistical and GIS techniques (poster).

12/11/2009 – 14/11/2009 – Ourense (Spain)

IX Congreso Galego de Estatística e Investigación de Operacións.

Communications:

- Predicción de la abundancia de Merluza argentina en el Atlántico suroeste utilizando una red neuronal (oral presentation)

12/05/2009 – 15/05/2009 – Lisbon (Portugal)

X Reunión Ibérica de Fitoplancton Tóxico e Biotoxinas.

Communications:

- Predicción de episodios de *Pseudo-nitzschia* spp. en las rías gallegas (oral presentation)


26/08/2021

Communications:

- Use of airborne and field data to validate Sea Surface Temperature data from MODIS and ATSR in the Ria of Vigo (poster).
- Development of a neural network to retrieve chlorophyll concentrations from MERIS images in the Galician coastal waters (poster).

● **NETWORKS AND MEMBERSHIPS**

07/2015 – 07/2016

Spanish Scientists in the USA (ECUSA)

USA

Participation in science dissemination activities at bilingual high-schools

● **DIGITAL SKILLS**

Microsoft Office

Remote Sensing and GIS Software

IDL-ENVI | SNAP (Remote Sensing) | IDRISI | Geographic Information System (GIS): ArcGIS, QGIS, MapInfo | Bilko | PCI Geomatics

Programming languages

R and R Commander | Matlab | JAVA | Python

Databases

SQL/MYSQL | Elasticsearch and Kibana

Machine learning

Neural Networks | Support Vector Machine (SVM) | Random Forest Model | Boosting (Gradient, AdaBoost)

Species Distribution Modelling

MaxEnt | BIOCLIM | DOMAIN | GAM | GLM | BST

Satellite images

Sentinel-3 (OLCI, SLSTR) | Sentinel-2 MSI | ENVISAT (MERIS, ASAR, AATSR) | LANDSAT | MODIS

Environmental datasets

Copernicus Marine Service Datasets | WorldClim | Aquamaps Environmental Dataset

Biodiversity datasets

Global Biodiversity Information Facility (GBIF) | Ocean Biodiversity Information System (OBIS)


26/08/2021

● PRODUCTS & SOFTWARE DEVELOPMENTS

2021

Harmful Algae Blooms (HABs) indicators

Set of remote sensing products developed within CoastObs project for the early detection and monitoring of HABs on the Galician coast (<https://zenodo.org/record/5045995#.YPg4hegzblV>). It includes:

- Regional chl-a OLCI algorithm
- OLCI *Pseudo-nitzschia* spp. species indicator
- OLCI *Alexandrium minutum* species indicator
- *Pseudo-nitzschia* spp. prediction product

2016

Freshwater data for ModestR

Global geographic database of freshwater habitats (http://www.ipez.es/ModestR/Site_mirror_water.php)

2012

Software for fishing users

Development of a visualization and communication tool installed on-board commercial fishing vessels within the project

Software for visualizing and managing environmental and fish data installed on board fishing vessels, developed within the project "Study of bottom circulation in Mauritania waters".

● LANGUAGE SKILLS

Mother tongue(s): SPANISH | GALICIAN

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C1	B2	B2	B2
PORTUGUESE	A2	A2	A2	A2	A2
ITALIAN	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user