ALEJANDRO C. FRERY

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EXPERIENCE

Alejandro C. Frery was born in Mendoza, Argentina, on 21 February 1960. In 1983 he received a B.Sc. degree in Electronic and Electrical Engineering from the Universidad de Mendoza. His M.Sc. degree was in Applied Mathematics (Statistics) from the Instituto de Matemática Pura e Aplicada (IMPA, Rio de Janeiro, 1990). His Ph.D. degree was in Applied Computing from the Instituto Nacional de Pesquisas Espaciais (INPE, São José dos Campos, Brazil, 1993). In 2007 he made a Postdoctoral stay of six months at IMPA, and in 2017 two months with the Northwest Institute of Eco-Environment and Resources (Chinese Academy of Sciences, Lanzhou) under the President's International Fellowship Initiative (PIFI). In 2018 he made a one-week Teaching Staff Mobility stay at the University of Pavia (Italy) in the framework of the Overseas Exchange Program. He held a "Huashan Scholar" position from the Xidian University, Xi'an, China, for the 2019–2021 period.

He served as Visiting Researcher at INPE during 1994 and 1995, then he moved to the Universidade Federal de Pernambuco, Recife, Brazil, where he was Visiting Professor (1996) and Assistant Professor (1997–2003).

Since 2003 he is a full professor at the Universidade Federal de Alagoas (Ufal), Brazil. He is the founder of LaCCAN – *Laboratório de Computação Científica e Análise Numérica*. He was the University Vice-Chancellor for Research, Graduate Courses, and Innovation from January 2016 to January 2020. Licensed from Ufal since 1 May 2020, he is currently Professor of Statistics and Data Science with the School of Mathematics and Statistics, Victoria University of Wellington, New Zealand.

Since 1999 he has been seamlessly awarded a CNPq Research Grant; he is currently Level 1B (the second-highest level).

His research interests are data visualization, statistical computing, and stochastic modeling, with applications in signal and image processing, and networks.

After serving as Associate Editor for more than five years, Prof. Frery was the Editor-in-Chief of the IEEE Geoscience and Remote Sensing Letters for the period 2014–2018. He was IEEE Geoscience and Remote Sensing Society (GRSS) Distinguished Lecturer from 2015 to 2019. In 2018 he received the IEEE GRSS Regional Leader Award. Since 2023 he is this Society's Vice-President for Publications.

RELEVANT LINKS

Institutional `https://people.wgtn.ac.nz/alejandro.frery`

Web of Science `https://www.webofscience.com/wos/author/record/A-8855-2008`

ORCID `https://orcid.org/0000-0002-8002-5341`

ResearchGate `https://www.researchgate.net/profile/Alejandro_Frery`

Google Scholar `https://scholar.google.com/citations?user=gnEYpw0AAAAJ&hl=en`

Lattes (Brazilian Academic Curriculum) `http://lattes.cnpq.br/6935433850568144`

LinkedIn: `http://www.linkedin.com/in/alejandrofrery`

PUBLICATIONS IN PEER-REVIEWED JOURNALS

2022

- A. A. Rey, N. R. Sarmiento, A. C. Frery, and C. Delrieux. Automatic delineation of water bodies in SAR images with a novel stochastic distance approach. *Remote Sensing*, 14(22):5716, nov 2022. doi:10.3390/rs14225716

- A. Bhattacharya, S. Dey, A. C. Frery, and J. J. Gil. New dual views of the generalized degree of purity. *Journal of the Optical Society of America A*, 39(12):2339–2342, nov 2022b. doi:10.1364/JOSAA.476423

- E. T. C. Chagas, A. C. Frery, J. Gambini, M. M. Lucini, H. S. Ramos, and A. A. Rey. Statistical properties of the entropy from ordinal patterns. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 32:113118, 2022a. doi:10.1063/5.0118706

- R. G. Negri, A. E. O. Luz, A. C. Frery, and W. Casaca. Mapping burned areas with multitemporal–multispectral data and probabilistic unsupervised learning. *Remote Sensing*, 14(21):5413, 2022. doi:10.3390/rs14215413

- J. A. Ferreira, A. D. C. Nascimento, and A. C. Frery. PolSAR models with multimodal intensities. *Remote Sensing*, 14(5083), 2022. doi:10.3390/rs14205083

- L. Gomez, J. Wu, and A. C. Frery. Non-local means filters for full polarimetric synthetic aperture radar images with stochastic distances. *Image Processing On Line*, 12:142–172, 2022. doi:10.5201/ipol.2022.346

- J. Cassetti and A. C. Frery. An improved minimum-distance texture estimator for specked data under the $\mathcal{G}^0$ model. *Journal of Mathematical Imaging and Vision*, 64:609–624, 2022. doi:10.1007/s10851-022-01086-y

- J. Cassetti, D. Delgadino, A. A. Rey, and A. C. Frery. Entropy estimators in SAR image classification. *Entropy*, 24(4):509, 2022. doi:10.3390/e24040509

- A. Bhattacharya, S. Dey, and A. C. Frery. Scattering purity and complexity in radar polarimetry. *IEEE Transactions on Geoscience and Remote Sensing*, 60:1–14, 2022a. doi:10.1109/TGRS.2022.3141790

- E. T. C. Chagas, M. Queiroz-Oliveira, O. A. Rosso, H. S. Ramos, C. G. S. Freitas, and A. C. Frery. White noise test from ordinal patterns in the Entropy-Complexity plane. *International Statistical Review*, 90(2):374–396, 2022b. doi:10.1111/insr.12487

- D. Chan, J. Gambini, and A. C. Frery. Entropy-based non-local means filter for single-look SAR speckle reduction. *Remote Sensing*, 14(3):509, January 2022. doi:10.3390/rs14030509

- X. Zhang, A. C. Frery, Y. Li, and P. Ren. Sea surface temperature prediction with memory graph convolutional networks. *IEEE Geoscience and Remote Sensing Letters*, 19:1–5, 2022. doi:10.1109/LGRS.2021.3097329

- A. A. de Borba, M. Marengoni, and A. C. Frery. Fusion of evidences in intensities channels for edge detection in PolSAR images. *IEEE Geoscience and Remote Sensing Letters*, 19:1–5, 2022. doi:10.1109/LGRS.2020.3022511

2021

- R. Negri and A. C. Frery. Unsupervised change detection driven by floating references: A pattern analysis approach. *Pattern Analysis and Applications*, 24(3):933–949, January 2021. doi:10.1007/s10044-020-00954-w

- Y. Li, X. Lyu, A. C. Frery, and P. Ren. Oil spill detection with multiscale conditional adversarial networks with small-data training. *Remote Sensing*, page 2378, 2021. doi:10.3390/rs13122378

- S. Dey, N. Bhogapurapu, A. Bhattacharya, D. Mandal, J. M. Lopez-Sanchez, H. McNairn, and A. C. Frery. Rice phenology mapping using novel target characterization parameters from polarimetric SAR data. *International Journal of Remote Sensing*, 42(14):5519–5543, May 2021c. doi:10.1080/01431161.2021.1921876

- O. Mudele, A. C. Frery, L. F. R. Zanandrez, A. E. Eiras, and P. Gamba. Dengue vector population forecasting using multi-source Earth Observation products and recurrent neural networks. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 14:4390–4404, 2021b. doi:10.1109/JSTARS.2021.3073351

- A. D. C. Nascimento, K. F. Silva, and A. C. Frery. Distance-based edge detection on synthetic aperture radar imagery. *Chilean Journal of Statistics*, 12(1):71–82, 2021. URL http://soche.cl/chjs/volumes/12/ChJS-12-01-05.pdf

- S. Dey, A. Bhattacharya, D. Ratha, D. Mandal, and A. C. Frery. Target characterization and scattering power decomposition for full and compact polarimetric SAR data. *IEEE Transactions on Geoscience and Remote Sensing*, 59(5):3981–3998, May 2021b. doi:10.1109/TGRS.2020.3010840

- S. Dey, A. Bhattacharya, A. C. Frery, C. López-Martínez, and Y. S. Rao. A model-free four component scattering power decomposition for polarimetric SAR data. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, pages 3887–3902, 2021a. doi:10.1109/JSTARS.2021.3069299

- O. Mudele, A. C. Frery, L. F. R. Zanandrez, A. Eiras, and P. Gamba. Modeling dengue vector population with Earth Observation data and a generalized linear model. *Acta Tropica*, 215: 105809, 2021a. doi:10.1016/j.actatropica.2020.105809

- R. Negri, A. C. Frery, W. Casaca, S. Azevedo, M. Dias, E. Silva, and E. Alcântara. Spectral-spatial aware unsupervised change detection with stochastic distances and support vector machines. *IEEE Transactions on Geoscience and Remote Sensing*, 59(4):2863–2876, April 2021. doi:10.1109/TGRS.2020.3009483

- D.-X. Yue, F. Xu, A. C. Frery, and Y.-Q. Jin. SAR image statistical modeling Part I: Single-pixel statistical models. *IEEE Geoscience and Remote Sensing Magazine*, 9(1):82–114, 2021b. doi:10.1109/MGRS.2020.3004508

- D.-X. Yue, F. Xu, A. C. Frery, and Y.-Q. Jin. SAR image statistical modeling Part II: Spatial correlation models and simulation. *IEEE Geoscience and Remote Sensing Magazine*, 9(1):115–138, 2021a. doi:10.1109/MGRS.2020.3027609

- C. G. S. Freitas, A. L. L. Aquino, H. S. Ramos, A. C. Frery, and O. A. Rosso. Author correction: A detailed characterization of complex networks using Information Theory. *Scientific Reports*, 11(1), 2021. doi:10.1038/s41598-021-81323-3

- E. T. C. Chagas, A. C. Frery, O. A. Rosso, and H. S. Ramos. Analysis and classification of SAR textures using Information Theory. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 14:663–675, 2021. doi:10.1109/JSTARS.2020.3031918

2020

- F. G. Rocha, R. F. Sabino, and A. C. Frery. Analysis of the international impact of the Brazilian base "Qualis" – Education. *Scientometrics*, 125(3):1949–1963, sep 2020. doi:10.1007/s11192-020-03713-0. URL https://rdcu.be/b7wQB

- D. Chan, A. A. Rey, J. Gambini, and A. C. Frery. Low-cost robust estimation for the single-look GI0 model using the Pareto distribution. *IEEE Geoscience and Remote Sensing Letters*, 17(11): 1879–1883, 2020. doi:10.1109/LGRS.2019.2956635

- A. C. Frery, L. Gomez, and A. C. Medeiros. A badging system for reproducibility and replicability in remote sensing research. *IEEE Journal of Selected Topics on Applied Earth Observations and Remote Sensing*, 13:4988–4995, 2020. doi:10.1109/JSTARS.2020.3019418

- D. Mandal, D. Ratha, A. Bhattacharya, V. Kumar, H. McNairn, Y. S. Rao, and A. C. Frery. A radar vegetation index for crop monitoring using compact polarimetric SAR data. *IEEE Transactions on Geoscience and Remote Sensing*, 58(9):6321–6335, September 2020. doi:10.1109/TGRS.2020.2976661

- A. C. Frery and J. Gambini. Comparing samples from the G0 distribution using a geodesic distance. *TEST*, 29(2):359–378, 2020. ISSN 1133-0686. doi:10.1007/s11749-019-00658-2

- D. Ratha, E. Pottier, A. Bhattacharya, and A. C. Frery. A PolSAR scattering power factorization framework and novel roll-invariant parameters based unsupervised classification scheme using a geodesic distance. *IEEE Transactions on Geoscience and Remote Sensing*, 58(5):3509–3525, May 2020b. doi:10.1109/tgrs.2019.2957514

- D.-X. Yue, F. Xu, A. C. Frery, and Y.-Q. Jin. A generalized Gaussian coherent scatterer model for correlated SAR texture. *IEEE Transactions on Geoscience and Remote Sensing*, 58(4):2947–2964, April 2020. doi:10.1109/TGRS.2019.2958125

- D. Ratha, P. Gamba, A. Bhattacharya, and A. C. Frery. Novel techniques for built-up area extraction from polarimetric SAR images. *IEEE Geoscience and Remote Sensing Letters*, 17(1): 177–181, January 2020a. doi:10.1109/LGRS.2019.2914913

- D. Santana-Cedrés, L. Gomez, L. Alvarez, and A. C. Frery. Despeckling PolSAR images with a structure tensor filter. *IEEE Geoscience and Remote Sensing Letters*, 17(2):357–361, February 2020. doi:10.1109/LGRS.2019.2919452. URL `http://ctim.ulpgc.es/demo111/`

2019

- A. C. Frery. Stochastic contrast measures for SAR data: A survey. *Journal of Radars*, 8(6):758–781, 2019. doi:10.12000/JR19108

- C. G. S. Freitas, A. L. L. Aquino, H. S. Ramos, A. C. Frery, and O. A. Rosso. A detailed characterization of complex networks using Information Theory. *Scientific Reports*, 9(1):16689, Nov 2019. doi:10.1038/s41598-019-53167-5

- A. Ferral, C. M. Scavuzzo, R. Solorza, J. Marquez, M. Salvia, L. Gomez, C. Notarnicola, F. Cigna, C. Lopez Martinez, A. Bhattacharya, X. Li, A. Camps, and A. C. Frery. Remote sensing spring school in Argentina: SAR for environmental and production monitoring. *IEEE Geoscience and Remote Sensing Magazine*, 7(3):107–109, September 2019. doi:10.1109/MGRS.2019.2933136. (Education column)

- J. B. Borges, H. S. Ramos, R. Mini, O. A. Rosso, A. C. Frery, and A. A. F. Loureiro. Learning and distinguishing time series dynamics via ordinal patterns transition graphs. *Applied Mathematics and Computation*, 362:UNSP 124554, 2019. doi:10.1016/j.amc.2019.06.068

- D. Ratha, D. Mandal, V. Kumar, H. McNairn, A. Bhattacharya, and A. C. Frery. A generalized volume scattering model based vegetation index from polarimetric SAR data. *IEEE Geoscience and Remote Sensing Letters*, 16(11):1791–1795, 2019. ISSN 1558-0571. doi:10.1109/LGRS.2019.2907703

- R. G. Negri, A. C. Frery, W. B. Silva, T. S. G. Mendes, and L. V. Dutra. Region-based classification of PolSAR data using radial basis kernel functions with stochastic distances. *International Journal of Digital Earth*, 12(6):699–719, 2019. doi:10.1080/17538947.2018.1474958

- A. D. C. Nascimento, A. C. Frery, and R. J. Cintra. Detecting changes in fully polarimetric SAR imagery with statistical information theory. *IEEE Transactions on Geoscience and Remote Sensing*, 57(3):1380–1392, March 2019. doi:10.1109/TGRS.2018.2866367

- L. Gomez, R. Ospina, and A. C. Frery. Statistical properties of an unassisted image quality index for SAR. *Remote Sensing*, 11(4):1–16, 2019. doi:10.3390/rs11040385

- M. G. Palacio, S. B. Ferrero, and A. C. Frery. Revisiting the effect of spatial resolution on information content based on classification results. *International Journal of Remote Sensing*, 40 (12):4489–4505, 2019. doi:10.1080/01431161.2019.1569278

2018

- I. Cardoso, E. Almeida, H. Allende-Cid, A. C. Frery, R. M. Rangayyan, P. M. Azevedo-Marques, and H. S. Ramos. Analysis of machine learning algorithms for diagnosis of diffuse lung diseases. *Methods of Information in Medicine*, 5/6:272–279, 2018. doi:10.1055/s-0039-1681086

- A. C. Frery. Editorial. *IEEE Geoscience and Remote Sensing Letters*, 15(12):1805–1806, December 2018. doi:10.1109/lgrs.2018.2881327

- D. Chan, A. A. Rey, J. Gambini, and A. C. Frery. Sampling from the GI0 distribution. *Monte Carlo Methods and Applications*, 24(4):271–287, 2018. doi:https://doi.org/10.1515/mcma-2018-2023

- F. Traversaro, F. O. Redelico, M. R. Risk, A. C. Frery, and O. A. Rosso. Bandt-Pompe symbolization dynamics for time series with tied values: a data-driven approach. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 28:075502–1–12, 2018. doi:10.1063/1.5022021

- D. Coelho, R. Cintra, A. C. Frery, and V. Dimitrov. Fast matrix inversion and determinant computation for polarimetric synthetic aperture radar. *Computers & Geosciences*, 119:109–114, 2018. doi:https://doi.org/10.1016/j.cageo.2018.07.002

- J. M. Scavuzzo, F. Trucco, M. Espinosa, C. B. Tauro, M. Abril, C. M. Scavuzzo, and A. C. Frery. Modeling dengue vector population using remotely sensed data and machine learning. *Acta Tropica*, 185(1):167–175, 2018. doi:10.1016/j.actatropica.2018.05.003

- D. Ratha, A. Bhattacharya, and A. C. Frery. Unsupervised classification of PolSAR data using a scattering similarity measure derived from a geodesic distance. *IEEE Geoscience and Remote Sensing Letters*, 15(1):151–155, January 2018. doi:10.1109/LGRS.2017.2778749

- A. Ferral, E. Luccini, V. Solis, A. C. Frery, A. Aleksinko, I. Bernasconi, and C. M. Scavuzzo. In-situ and satellite monitoring of water quality of an eutrophic lake with an artificial air diffusion system. *IEEE Latin America Transactions*, 16(2):627–633, 2018. doi:10.1109/TLA.2018.8327422

BOOKS AND CHAPTERS

- A. C. Frery, J. Wu, and L. Gomez. *SAR Image Analysis – A Computational Statistics Approach: with R code, data, and applications*. Wiley–IEEE Press, 2022. ISBN 978-1119795292. URL https://www.wiley.com/en-us/SAR+Image+Analysis+A+Computational+Statistics+Approach:+With+R+Code,+Data,+and+Applications-p-9781119795520

- A. C. Frery. Autocorrelation. In B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, editors, *Encyclopedia of Mathematical Geosciences*, pages 1–3. Springer International Publishing, 2021a. doi:10.1007/978-3-030-26050-7_46-1

- A. C. Frery. Log-likelihood ratio test. In B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, editors, *Encyclopedia of Mathematical Geosciences*, pages 1–4. Springer International Publishing, 2021b. doi:10.1007/978-3-030-26050-7_313-1

- A. C. Frery. Rank score test. In B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, editors, *Encyclopedia of Mathematical Geosciences*, pages 1–2. Springer International Publishing, 2021c. doi:10.1007/978-3-030-26050-7_266-1

- A.C. Frery. Smoothing filter. In B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, editors, *Encyclopedia of Mathematical Geosciences*, pages 1–5. Springer International Publishing, 2021e. doi:10.1007/978-3-030-26050-7_299-1

- A. Standard deviation. In B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, editors, *Encyclopedia of Mathematical Geosciences*, pages 1–3. Springer International Publishing, 2021. doi:10.1007/978-3-030-26050-7_312-1

- A. C. Frery. Univariate. In B. S. Daya Sagar, Q. Cheng, J. McKinley, and F. Agterberg, editors, *Encyclopedia of Mathematical Geosciences*, pages 1–5. Springer International Publishing, 2021d. doi:10.1007/978-3-030-26050-7_339-1

GRADUATE SUPERVISION

PhD Theses

- A. A. de Borba. *Fusão de Evidências de Bordas dos Canais de Intensidade de Imagens de Radar Polarimétrico de Abertura Sintética*. Doutorado em Engenharia Elétrica e Computação, Universidade Presbiteriana Mackenzie, São Paulo, SP, Brazil, December 2020 (*Fusion of Edge Evidence from Intensity Channels of Polarimetric Synthetic Aperture Radar Images*)

- D. Chan. *Ensayos sobre la Distribuición $\mathcal{G}^0$ Single-Look: Propiedades, Simulación, Estimación y Reducción de Ruido Speckle*. Doctorado en Ingeniería (Imágenes y Señales), Universidad Tecnológica Nacional, Buenos Aires, Argentina, December 2020 (*Essays about the $\mathcal{G}^0$ Single-Look Distribution: Properties, Simulation, Estimation, and Speckle Noise Reduction*)

- D. Ratha. *A Geodesic Distance-Based Approach to PolSAR Data Analysis and its Applications*. PhD thesis, Center of Studies in Resources Engineering, Indian Institute of Technology Bombay, 2020

- J. Cassetti. *Estimación de Parámetros en Imágenes SAR Monopolarizadas Usando Distancias Estocásticas y Núcleos Asimétricos*. Doctorado en Ciencia y Tecnología (PhD), Universidad Nacional General Sarmiento, Argentina, 2020 (*Parameter Estimation in SAR Imagery with Stochastic Distances and Asymmetric Kernels*)

- M. G. Palacio. *Evaluación del Contenido de Información en Imágenes de Radar de Apertura Sintética*. Doctorado en Ciencias de la Ingeniería (PhD), Universidad Nacional de Córdoba, Córdoba, Argentina, 2019 (*Information Content Assessment in Synthetic Aperture Radar Images*)

MSc Theses

- R. do Herval Neto. Novos campos aleatórios para extração de textura em imagens de amplitude e intensidade SAR. Master's thesis, Universidade Federal de Pernambuco, Recife, PE, Brazil, 2021. Mestrado em Estatística (*New Random Fields for Texture Extraction in Amplitude and Intensity SAR Images*)

- E. Chagas. Contributions to the study of time series and images with the Entropy-Complexity plane. Master's thesis, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil, 2021. Mestrado em Ciência da Computação

- K. B. Costa. Categorização de textos por aprendizagem de máquina. Master's thesis, Universidade Federal de Alagoas, Maceió, AL, Brazil, 2019. Mestrado em Modelagem Computacional de Conhecimento (*Text Categorization with Machine Learning*)

- V. L. P. Ribeiro. Redes de coautoria da base SciELO: Avaliação da colaboração científica por medidas de centralidade de redes complexas. Master's thesis, Universidade Federal de Alagoas, Maceió, AL, Brazil, 2019. Mestrado em Modelagem Computacional de Conhecimento (*Assessment of Scientific Collaboration by Centrality Complex Networks Measures in the SciELO Base*)

TEACHING EXPERIENCE AND PHILOSOPHY

The most recent courses I have taught are:

Undergraduate: Multivariate Analysis, Methodology of Science, Image Processing, Probability, and Statistics.

Graduate: Methodology of Science, Image Processing, Probability and Statistics, Computational Statistics, and Stochastic Simulation.

Whenever possible, I have joined (even partially) undergraduate and graduate students. The former benefit from the presentation of more advanced concepts and techniques, which are at the core of working with the latter.

I designed all the courses listed but following the general guidelines required by the University.

My philosophy consists in conveying the required contents through a PBL (Problem-Based Learning) approach. Practical problems are stated at the beginning of the course, the fundamental concepts and tools are explained, and, step-by-step, the problems are solved. This hands-on approach has proved to be effective, as it stimulates students to absorb concepts and to practice the tools presented.

I was responsible for introducing the use of the R and 0x programming languages in these courses. Besides that, I have always shown the importance of adhering to the principles of Reproducible Research and, in order to stress that, my students use LaTeX, BibTeX, and Git.

LEADER OF FUNDED PROJECTS

- Time Series Analysis with Ordinal Patterns: Transformative Theoretical Advances and New Applications, funded by Victoria University of Wellington, New Zealand, 2023.

- Detecting Sparse Ice in the Southern Ocean, funded by Oceanum Limited, New Zealand. 2021.

- The SIT/SIG Approach for Networks, Signal and Image Processing and Analysis, funded by CNPq[1] (Grant 303267/2019-4, 2020–2024).

- The SIT/SIG Approach for Signal and Image Processing and Analysis, funded by CNPq (Grant 405364/2018-0, 2019–2021).

- Innovative Applications of Information Theory in Signal and Image Processing (*Aplicações Inovadoras da Teoria da Informação no Processamento e Análise de Imagens e Sinais*), funded by CNPq (Research Grant level 1B, 304515/2013-2, 2014–2020).

ORGANIZATION OF INTERNATIONAL SCIENTIFIC MEETINGS

2025 IGARSS 2025 International Geoscience and Remote Sensing Symposium, Australia.

2023 MIGARS 2023 Machine Intelligence for GeoAnalytics and Remote Sensing, India.

2020 InGARSS 2020 International India Geoscience and Remote Sensing Symposium. Publication Chair. Ahmedabad, Gujarat, India.

2020 LAGIRS 2020 Latin America joint GRSS and ISPRS Remote Sensing Conference. Technical Program Chair, Santiago, Chile.

EDITORIAL SERVICES

Vice-President of Publications: IEEE Geoscience and Remote Sensing Letters (2023–present).

Editor-in-Chief: IEEE Geoscience and Remote Sensing Letters (2014–2018).

Associate Editor: IEEE Geoscience and Remote Sensing Letters (2008–2013), Brazilian Journal of Probability and Statistics (2008–2014), Revista Brasileira de Biometria (2008–2014), Ensaios Matemáticos (2011–2014).

Guest Associate Editor: IEEE Geoscience and Remote Sensing Letters (2020), Remote Sensing (2019), IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (2016, 2020), International Journal of Antennas and Propagation (2013).

Reviewer: IEEE Geoscience and Remote Sensing Letters, IEEE Transactions on Geoscience and Remote Sensing, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, International Journal of Remote Sensing, Journal of Applied Remote Sensing, International Journal of Digital Earth, Stochastic Environmental Research and Risk Assessment,

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[1]CNPq – *Conselho Nacional de Desenvolvimento Científico e Tecnológico* is the Brazilian equivalent to the American National Science Foundation.

Environmental Research, IEEE Transactions on Image Processing, IEEE Transactions on Medical Imaging, Journal of Mathematical Imaging and Vision, Image and Vision Computing, Journal of Electronic Imaging, Pattern Recognition Letters, International Journal of Pattern Recognition and Artificial Intelligence, IEEE Signal Processing Letters, Sensors (Basel), Digital Signal Processing, EURASIP Journal on Advances in Signal Processing, IET Radar, Sonar & Navigation, Journal of Aerospace Technology and Management, Electronics Letters, IEEE Communications Letters, Engineering with Computers, Journal of Statistical Computation and Simulation, Computational & Applied Mathematics, Computational Statistics & Data Analysis, Computational and Mathematical Methods in Medicine, Communications in Statistics: Simulation and Computation, Computers & Mathematics with Applications, Computers & Graphics, COMPEL (Bradford), Bulletin of the Brazilian Mathematical Society, Brazilian Journal of Probability and Statistics, Revista Colombiana de Estadística, Applied Stochastic Models in Business and Industry, Communications of the ACM, Computational Economics, Physica A-Statistical Mechanics and its Applications, Journal of Cultural Heritage, Journal of the Brazilian Computer Society, Annals of the Brazilian Academy of Sciences, Chaos, Solitons & Fractals, Entropy, Science Bulletin.

MEMBER OF SCIENTIFIC SOCIETIES

- Brazilian Computer Society (SBC – *Sociedade Brasileira de Computação*, 1991–2020)

- Brazilian Statistical Association (ABE – *Associação Brasileira de Estatística*, 1991–2020)

- IEEE Geoscience and Remote Sensing Society (IEEE GRSS, Student 1992, Member 1994, Senior Member since 2013)

  - Elected Member of the AdCom (Advisory Committee), in charge of Plagiarism and Future Publications, 2019–2022.

  - Member of the Special Issues Committee of IEEE Journal of Selected Topics on Applied Earth Observations and Remote Sensing (JSTARS), since 2019.

  - Member of the Distinguished Lecturer Search Committe, since 2020.

- Brazilian Society for Applied and Computational Mathematics (SBMAC – *Sociedade Brasileira de Matemática Aplicada e Computacional*, 1997–2020)

- Brazilian Society for the Progress of Science (SBPC – *Sociedade Brasileira para o Progresso da Ciência*, 2017–2020)

- International Society for Photogrammetry and Remote Sensing (ISPRS, since 2019)

- New Zealand Statistical Association, since 2020

- Statistical Society of Australia, since 2020