

# Juan A. Arias López

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## Education

- 2018 – 2025    **Ph.D. Neuroscience and Clinical Psychology (minor in Biostatistics)** at University of Santiago de Compostela - Biostatistics & Biomedical Data Science Unit.  
*"Development of statistical methods for the analysis of neuroimage data towards early diagnosis of neurodegenerative diseases."* Supervisors: Dr. Pablo Aguiar-Fernández & Dr. Andrew H. Kemp & Dr. Carmen Cadarso-Suárez (†). Qualification: Outstanding *summa cum laude*.
- (2021) Research stance at Institute for Systems and Computer Engineering, Technology, and Science – University of Porto. Supervisor: Dr. Jaime Cardoso - 4 months.
  - (2024) Research stance at Abel Salazar Biomedical Sciences Institute – University of Porto. Supervisor: Dr. Pedro Oliveira - 4 months.
  - (2025) Research stance at School of Industrial Engineering of Albacete – Universidad de Castilla-La Mancha. Supervisor: Dr. Virgilio Gómez - 4 weeks.
- 2018 – 2023    **M.Sc. Statistical Techniques** at University of A Coruña.  
Final dissertation: *"Statistical analysis and automatic classification of Positron Emission Tomography neuroimaging data in Alzheimer's Disease."* Supervisors: Dr. Rubén Fernández Casal & Dr. Manuel Oviedo de la Fuente
- 2015 – 2016    **M.Sc. Neuroscience and Clinical Psychology** at University of Santiago de Compostela. Minor in *Cognitive Neuroscience*.  
Final dissertation: *"Effects of intensive alcohol consumption patterns (Binge Drinking) on attention and memory processes in university students: A follow-up study using Event-Related Potentials"*. Supervisors: Dr. Sonia Doallo-Pesado & Dr. Fernando Cadaveira-Mahía
- 2011 – 2015    **B.Sc. Biology** at University of A Coruña.  
Final dissertation: *Understanding biological invasions: an experimental study with *Carpobrotus edulis**. Supervisor: Dr. Sergio Rodríguez-Roiloa

## Employment History

- 2024 –    **Freelance Data Analyst** and Technical Writer (*Remote*)
- 2023 – 2024    **Biostatistician** at Biostatech, Advice, Training & Innovation in Biostatistics, S.L.  
Statistical consultancy, Data Analysis, R Programming, R&D assistance, R Packages.
- 2022 – 2023    **Research Technician** at Center for Research in Molecular Medicine and Chronic Diseases (CIMUS) - University of Santiago de Compostela  
*2IQBIONEURO. Promotion of an R&D network in biological chemistry for the diagnosis and treatment of neurological diseases..* Supervisor: Dr. Pablo Aguiar Fernández
- 2019 – 2020    **Research Trainee** at University of Santiago de Compostela - Biostatistics and Biomedical Data Science Unit. *Implementation of GAMLSS models for application in neuroimage and diagnosis of neurodegenerative diseases.* Supervisor: Dr. Carmen Cadarso-Suárez (†)
- 2017 – 2017    **Assistant Teacher** at Swansea University, College of Human and Health Sciences. *Introduction to Medical Psychology* of the *Genetics B.Sc.* and *Applied Medical Sciences B.Sc.*. Corrector and assistant in the module *Statistical Methods in Psychology*. Supervisor: Dr. Andrew H. Kemp
- 2016 – 2017    **Research Assistant** at Swansea University, Psychology Department.

## Research Publications

- 1 **Arias-López, Juan A.**, Cadarso-Suárez, C., Aguiar-Fernández, P., & Kemp, A. H. (Under review). Validation of functional data analysis for early detection in alzheimer's disease neuroimaging: A simulation study. *Neuroimage*.
- 2 Rodríguez-Cortés, F. J., **Arias-López, J. A.**, Oviedo-de la Fuente, M., Jiménez-Pastor, J. M., López-Coleto, L., Arévalo-Buitrago, P., de la Cruz López-Carrasco, J., Valverde-León, R., López-Soto, P. J., & Morales-Cané, I. (2025). Impact of the environment on health status of intensive care unit patients: Functional data analysis using wearable monitoring systems. *Intensive & Critical Care Nursing*, 91, 104183. <https://doi.org/https://doi.org/10.1016/j.iccn.2025.104183>
- 3 **Arias, J. A.** (2025). *Neurosc: Bridging simultaneous confidence corridors and pet neuroimaging* [R package version 1.0.0]. <https://doi.org/10.32614/CRAN.package.neuroSCC>
- 4 **Arias, J. A.**, Cadarso-Suárez, C., & Aguiar-Fernández, P. (2022). Functional data analysis for imaging mean function estimation: Computing times and parameter selection. *Computers*. <https://doi.org/10.3390/computers11060091>
- 5 **Arias, J. A.**, Cadarso-Suárez, C., & Aguiar-Fernández, P. (2021). Computational issues in the application of functional data analysis to imaging data. *Computational Science and Its Applications – ICCSA 2021*. [https://doi.org/10.1007/978-3-030-86960-1\\_46](https://doi.org/10.1007/978-3-030-86960-1_46)
- 6 **Arias, J. A.**, Williams, C., Raghvani, R., Aghajani, M., Baez, S., Belzung, C., Booij, L., Busatto, G., Chiarella, J., Fu, C., Ibañez, A., Liddell, B., Lowe, L., Penninx, B., Rosa, P., & Kemp, A. (2020). The neuroscience of sadness: A multidisciplinary synthesis and collaborative review for the human affectome project. *Neuroscience and Biobehavioural Reviews*. <https://doi.org/10.1016/j.neubiorev.2020.01.006>
- 7 Kemp, A. H., **Arias, J. A.** & Fisher, Z. (2017). Social ties, health and wellbeing: A literature review and model. In *Neuroscience and social science* (pp. 397–427). Springer. [https://doi.org/10.1007/978-3-319-68421-5\\_17](https://doi.org/10.1007/978-3-319-68421-5_17)
- 8 **Arias, J. A.** (2016). Efectos del consumo intensivo de alcohol (binge drinking) sobre procesos de atención y memoria en población universitaria: Un estudio de seguimiento con potenciales evocados. <http://hdl.handle.net/2183/17393>

## Conference Presentations

- 1 **Arias-López, Juan A.**, Aguiar-Fernández, P., Cadarso-Suárez, C., & Kemp, A. H. (2025). A comparative study of functional data analysis and statistical parametric mapping for alzheimer's disease neuroimaging [Prize to the **Best Poster Presentation**]. *6th Scientific Meeting of the BIOSTATNET National Network, Valencia, Spain*.
- 2 **Arias-López, Juan A.**, Cadarso-Suárez, C., Oviedo de la Fuente, M., & López-Soto, P. J. (2023). Functional data and wearable monitoring systems: A study with patients in the intensive care unit of the hospital of córdoba. *19th Spanish Conference on Biometry and 8th Ibero-American Biometry Meeting (CEB-EIB 2023), Vigo, Spain*.
- 3 **Arias-López, J.A.** (2022). Comparing functional data analysis and statistical parametric mapping with neuroimaging data. *31st International Biometric Conference, Riga, Latvia*.
- 4 **Arias-López, J.A.** (2021). Simultaneous confidence corridors and neuroimaging: Applications to alzheimer's disease. *V Scientific Conferences of Students of the Spanish Society of Biostatistics, Online, Spain*.
- 5 **Arias-López, J.A.**, Cadarso-Suárez, C., & Aguiar-Fernández, P. (2021). Datos funcionais e neuroimaxe: Aplicabilidade e comparativa con statistical parametric mapping. *XV Galician Congress of Statistics and Operations Research, Santiago de Compostela, Spain*.

## Languages

- Spanish    📌 Mother tongue.
- Galician    📌 Mother tongue. CELGA 4 (C1)
- English    📌 Fluent. Trinity College Exams (C1). Cambridge Exams (B2).
- Portuguese    📌 Strong Oral and Comprehension Skills, Basic Writing. Official School of Languages (A2).

## Other Skills

- Office    📌 Proficient user of Microsoft Office and Open Office suites.
- Coding    📌 R (Advanced), R Markdown (Advanced),  $\LaTeX$  (Intermediate), SQL (Intermediate), GIT (Intermediate), PYTHON (Elementary), MATLAB (Elementary).
- Big Data    📌 BIGQUERY (Advanced), VERTEX AI (Intermediate).

## Miscellaneous Experience

### R Package Development

- 2024 – 2025    📌 **neuroSCC** — Creator and maintainer of the package [neuroSCC](#) (CRAN), developed to support reproducible statistical analysis in neuroimaging.
- 2023 – 2024    📌 **Biostatech** — Developer of Biostatech S.L.’s corporate package for data analysis workflows. Details available upon request under confidentiality agreement.

### Courses

- 2022    📌 Screening for Perinatal Mental Health Disorders. PPD’s COST Action - Valletta (25 hours).
- 2021    📌 Interventions in Peripartum Depression. PPD’s COST Action - Madrid (25 hours).
- 📌 Principles and Practices in Clinical Trials. Riseup-PPD’s COST Action - Barcelona (25 hours).
- 📌 Science Communication in the Radio. FECYT (8 hours).
- 2019    📌 Multi-State Models with R. University of Santiago de Compostela (BIOSTATNET).
- 2018    📌 Statistical Analysis with R. University of Santiago de Compostela (20 hours).
- 📌 Introduction to R for the Social Sciences. University of Santiago de Compostela (15 hours).

### Memberships

- 2020    📌 [RISEUP-PPD COST](#), the European research network in Peripartum Depression.
- 📌 [International Biometric Society](#) as part of the Spanish Biostatistics Society.
- 2019    📌 [GENIAL science](#), as external collaborator to Prof. Andrew H. Kemp.
- 2017    📌 [Neuroqualia - The Human Affectome Project](#), as assistant to Prof. Andrew H. Kemp.