

# Juan A. Arias López

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## Education

- 2018 – **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 (†)
- (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 - 3 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 Rodríguez-Cortés, F. J., **Arias-López, Juan A.**, Oviedo-de la Fuente, M., Jiménez-Pastor, J. M., López-Coletto, L., Arévalo-Buitrago, P., López-Carrasco, J. d. I. C., Valverde-León, R., López-Soto, P. J., & Morales-Cané, I. (Under review). Impact of the environment on health status of intensive care unit patients: Functional data analysis using wearable monitoring systems. *Intensive & Critical Care Nursing*.
- 2 **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*.
- 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 BIOSSTATNET 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), L <sup>A</sup> T <sub>E</sub> X (Intermediate), SQL (Intermediate), PYTHON (Elementary), MATLAB (Elementary), GIT (Elementary).
Big Data	■ BIGQUERY (Advanced), VERTEX AI (Intermediate).

## Miscellaneous Experience

### R Package Development

2024 – 2025	■ <b>neuroSCC</b> — Creator and maintainer of the package <a href="#">neuroSCC</a> (CRAN), developed to support reproducible statistical analysis in neuroimaging.
2023 – 2024	■ <b>Biostatech</b> — 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).

### Scientific Dissemination

2020	■ <b>Lecturer</b> at the project " <a href="#">Stat Wars - The Data Empire</a> " organized by University of Santiago de Compostela and the Spanish Foundation for Science and Technology (FECYT).
2018 –	■ <b>Producer and host</b> across various radio platforms including: <a href="#">Los Idus</a> (Radio Kalimera), <a href="#">Radio Pardiñas</a> , <a href="#">Vivirmos nun Mundo Finito</a> (Radio Ames, with Manuel Casal Lodeiro), <a href="#">Stat Wars</a> (BIOSTATNET & FECYT), <a href="#">Lia(das) Par(das)</a> (with Manuel Vicente), and <a href="#">Unexpected Elements</a> (BBC World Service).
2014	■ <b>Founder member</b> of the scientific dissemination society <a href="#">UDCbigbang</a> .

### Memberships

2020	■ <a href="#">RISEUP-PPD COST</a> , the European research network in Peripartum Depression. ■ <a href="#">International Biometric Society</a> as part of the Spanish Biostatistics Society.
2019	■ <a href="#">GENIAL science</a> , as external collaborator to Prof. Andrew H. Kemp.
2017	■ <a href="#">Neuroqualia - The Human Affectome Project</a> , as assistant to Prof. Andrew H. Kemp.