Silvia Diz de Almeida

BIOSTATISTICIAN, PHD IN STATISTICAL GENETICS

Biostatistician with 4+ years in genomics research and 5+ years of expertise in R programming. Experienced in regression modelling, risk prediction, and biomarker identification for large-scale biomedical studies. Seeking to apply statistical expertise to clinical trials and RWE studies.

PROFESSIONAL EXPERIENCE

Biostatistician - Researcher

CiMUS (University of Santiago de Compostela), Genomic Medicine Group

- Conducted statistical analysis of genomic and biomedical data, identifying and prioritizing candidate genes associated with various diseases.
- Executed and designed analyses for the SCOURGE consortium, involving multi-country clinical and genetic data from +10,000 patients, to identify genetic determinants underlying COVID-19 severity.
- Implemented and validated regression models for disease risk prediction and stratification and assessed Polygenic Risk Scores (PRS) as potential personalized medicine tools.
- Applied multiple statistical methods, including hypothesis testing, descriptive statistics, fixed-effects meta-analysis, PCA, mixed models, GLMs and regularized regression, model validation and performance metrics.
- Collaborated in interdisciplinary teams across national and international projects, resulting in co-authorship of +10 publications, 3 of them as first author.
- Built and automated R and bioinformatic pipelines for large-scale genomic studies in complex diseases.
- Mentored junior researchers in R programming, statistical methods, and bionformatics. Co-supervised a MSc thesis.
- Conducted data harmonization and pre-processing of large databases using R.
- Communicated to non-specialized audiences and participated in the dissemination and reporting of results.

Research intern

CiMUS (University of Santiago de Compostela), Genomic Medicine Group

- Assisted in database wrangling and data preparation using R.
- Conducted quality control of genomic data and researched statistical genetic methods.

EDUCATION

- PhD in Molecular Medicine (Statistical Genetics; Bioinformatics) University of Santiago de Compostela, 2024
- MSc in Statistical Techniques University of Santiago de Compostela, 2021
- BSc in Biology University of Santiago de Compostela, 2015

SKILLS

Exploratory dat	ta analysis		Regression r	nodelling	Observational s	Observational studies	
Univariate and multivariate statistics			Statistical learning		Data cleansing	Data cleansing and visualization	
Programming Advanced R	Basic python	Interm	ediate bash	Bioinform	natics software		
Other skills Adaptability	Problem-solving	Auton	nomy Proa	ictivity S	Spanish (Native)	English (Cambridge C2 certificate)	

COURSES

- Hands on clinical reporting using R (Genentech Coursera) November 2024
 ADAM datasets, statistical programming, admiral, TLFs, NEST, teal
- A crash course in causality (University of Pennsylvania Coursera) December 2024
 - Causality, propensity score matching, IPTW, IVs

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- https://silviaadiz.github.io/
- in/silvia-diz/

Jun 2020-Jul 2024 Santiago de Compostela

Feb 2020-Jun 2020 Santiago de Compostela

Main projects

- Genetic determinants of COVID-19 (SCOURGE consortium) 2020-2024
 Role: Co-lead biostatistician.
 Summary: International project aimed at studying the genetic basis of COVID-19 and the development of genetic tools for personalized medicine.
- Genetics of aggresive periodontitis (PERIOGEN study) 2022-2024
 Role: Assistant biostatistician.
 Summary: National project focused on identifying genetic factors contributing to aggressive periodontitis.

• Teaching and mentorship

- STEMbach program 2023-2024
 - Role: Project co-supervisor. Summary: Excellence program in STEM where high school students developed a research project on mendelian randomization in collaboration with our research group.
- Supervision of a Bioinformatics for health sciences MSc Thesis 2023
 - Role: Thesis co-director. Summary: "Comparison of genetic imputation in individual cohorts versus joint imputation: Involved factors and proposed actions."

Seminars and talks

- MSc in Biomedical Science: Seminars in R programming, pharmacogenetics and polygenic risk scores.
- Basic statistics and R programming workshop: session for high school students.
- Seminar: "Polygenic Risk Scores for COVID-19 Hospitalization in Spanish and Latin-American Populations" at the Foundation Health Research Institute, Santiago de Compostela.
- Talk: "The Jessica Jones of DNA: How statistics help uncover the mysteries of complex phenotypes" at a high school.

• Publications

- ORCID: 0000-0003-2813-8928
 - Diz-de Almeida, S., Cruz, R., ..., Carracedo, A.(2024) Novel risk loci for COVID-19 hospitalization among admixed American populations. eLife 13:RP93666.
 - Diz-de Almeida, S., Richter, G., ..., Cruz, R., Schaefer, A. S. (2023). A genome-wide association study meta-analysis in a European sample of stage III/IV grade C periodontitis patients 35 years of age identifies new risk loci. Journal of clinical periodontology. https://doi.org/10.1111/jcpe.13922
 - Diz-de Almeida, S., Cruz, R., ..., Flores, C., Carracedo, A. (2022). Novel genes and sex differences in COVID-19 severity. *Human molecular genetics*, 31(22), 3789–3806. https://doi.org/10.1093/hmg/ddac132
 - Alemany-Navarro, M., **Diz-de Almeida**, **S.**, ... ,Carracedo, A. (2023). Psychiatric polygenic risk as a predictor of COVID-19 risk and severity: insight into the genetic overlap between schizophrenia and COVID-19. *Translational psychiatry*, 13(1), 189. https://doi.org/10.1038/s41398-023-02482-7