

# Silvia Diz

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## BIOSTATISTICIAN

Biostatistician with 4 years of experience in analyzing biomedical data and 5 in R programming, complemented by a PhD in Molecular Medicine (statistical genetics) and a MSc in Statistical Techniques. For these past years I have been involved in genomics research, collaborating in several international projects comprising the design and execution of analyses and communication of results. Always enthusiastic about learning and committed to teaching myself new skills when needed, I am currently seeking opportunities as a biostatistician/statistical programmer in the health industry.

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## SKILLS

**Statistics and programming:** Advanced R, R-markdown, exploratory data analysis, frequentist statistics, regression modelling (GLMs, mixed models), classification and prediction, parametric and non parametric statistics, data visualization, analysis of variance, survival analysis, multivariate statistics, statistical learning, bash, beginner python.

**Other skills:** Research, scientific writing, time management, leadership, adaptability, self-learning, resourcefulness, Spanish (native speaker), English (C2 Proficiency).

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## PROFESSIONAL EXPERIENCE

2020-2024

Center for Research in Molecular Medicine and Chronic Diseases - Genomic Medicine Group

### Biostatistician | Research technician

- Led the analysis for 4 main scientific projects and assisted the team providing biostatistics expertise to study genetic and non genetic factors. Identified genes and variants associated with COVID-19, small-cell lung cancer and periodontal disease.
- Collaborated in interdisciplinary teams, ensuring the compliance with their needs and the proper interpretation of data and results.
- Coordinated the development of national and international projects, including the distribution of tasks, management of timelines and delivery of reports. Led and coordinated a remote collaboration.
- Designed and executed computational experiments to evaluate Polygenic Risk Scores (PRS) as biomarkers for COVID-19. Implemented statistical regression models, including logistic, multinomial, and ordinal. Assessed the performance of predictive models using proper metrics and conducted decision curve analyses comparing models with and without genetic factors.
- Built R pipelines to automate analyses for the research group.
- Applied multiple statistical methods such as hypothesis testing, classification and clustering, fixed-effects meta-analysis, PCA, logistic mixed models and regularized regression, ANOVA, univariate analysis and descriptive statistics.
- Performed data cleansing and harmonization of a multi-center database involving over 30 research units.
- Contributed with the main analyses to the largest COVID-19 host genetics consortium in Spain and Latin America (SCOURGE).
- Mentored PhD students, interns and high school students in R programming and statistics. Supervised a MSc thesis in Bioinformatics and supervised a high school research project.
- Elaborated reports, the statistical analysis plan for grant proposals, and manuscripts. Authored and published several publications in high-impact scientific journals, including 3 as first author.

## EDUCATION

2021-2024     **PhD in Molecular Medicine - University of Santiago de Compostela**

- Statistical Genetics; Bioinformatics
- Supervisors: Dr. Angel Carracedo, Dr. Raquel Cruz.

2019-2021     **MSc in Statistical Techniques - University of Santiago de Compostela**

- Relevant courses: multivariate analysis, spatial analysis, probability models, mixed models, parametric and non parametric regression, survival analysis, time series

2015-2019     **BSc in Biology - University of Santiago de Compostela**

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## COURSES AND CERTIFICATIONS

**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

**Python Programming** (Udemy) - In progress

**Certificate of Proficiency in English - Cambridge C2** (2021)

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## PROJECTS

- **Doctoral thesis:** Genetic and population analysis of variability in COVID-19 severity.
    - Xunta de Galicia Predoctoral Grant
    - Cum Laude
  - **MSc thesis:** Comparison of regression models in GWAS studies.
  - **BSc thesis:** Gender perspective in Biology research and teaching.
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## SELECTED 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>