



# Daniel Mouzo Calzadilla

Senior Bioinformatics & Workflow Architect

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Senior Bioinformatician with 10+ years of combined experience translating complex genomic datasets into scalable, reproducible pipelines. Expert in Nextflow workflow engineering, on-prem HPC cluster management, and leading cross-functional collaborations for €4M international consortia. Fully prepared to design cloud-ready analytical workflows under strict quality and data integrity standards.

## WORK EXPERIENCE

### Senior Bioinformatician, BCI, Queen Mary University of London

2025 - Present

- Engineered production-grade Nextflow pipelines processing 20+ TB of clinical WGS data within the Genomics England.
- Automated reporting systems, integrating variant calling with SQL clinical data to reduce turnaround times to under 3 hours.

☆ *Workflow Engineering, Big Data Architecture, Nextflow, Genomic England, Shiny dashboards*

### Visiting Scientist, Gene Therapy , Ospedale San Raffaele

2025

- Harmonized scMultiome datasets across XPAND clinical sites to support cross-centre comparison and downstream translational analysis.
- Validated LT-HSC signatures in AML-derived cells, linking multi-omic profiles to clinically relevant cell-state interpretation.

☆ *Data Standardization, Single-Cell, Gene therapy, Data Provenance, Computational Biology*

### Visiting Scientist , Workflow & Data Systems, KAUST

2023

- Designed Snakemake preprocessing workflows for large-scale NGS datasets, reducing turnaround time and standardizing execution.
- Built relational databases to centralize experimental metadata and strengthen data integrity across collaborative projects.

☆ *Relational Database Design, Snakemake, Quality Control*

### Postdoctoral Bioinformatician, Navarrabiomed

2021- 2025

- Coordinated a cross-functional work package of 30+ multi-site researchers for European gene therapy project
- Developed automated single-cell NGS pipelines, standardizing and data harmonization across international clinical centers.

☆ *Gene Regulatory Networks, Data Harmonization, NGS pipelines, Consortium Management*

### Research Assistant , University Santiago de Compostela

2015-2020

- Optimized LC-MS and quantitative proteomics workflows, reducing turnaround time by 1.5 days and increasing sample throughput.
- Developed traceability analytics for industrial quality control, translating experimental data into cost-saving decisions.

☆ *Mass Spectrometry, Industrial Biotechnology, Two-dimensional electrophoresis*

## CERTIFICATES

### ISO 13485 Internal Auditor

Comply Guru

2026

### AWS Cloud Practitioner

AWS

2025

### Nextflow Advanced

Sequera

2025

### Project Management

Google

2023

### Machine learning and Big Data for Bioinformatics

University of Granada

2023

### Cybersecurity

Cámara de Comercio

2023

### Data Science Specialized

Program

IBM

2020

## EDUCATION

### PhD in Molecular Biology

University of Santiago de Compostela

2017-2020

### Master Degree in Innov. in Food Safety and Tech.

University of Santiago de Compostela

2016-2020

### Degree in Biology

University of Santiago de Compostela

2012-2016

## SELECTED PROJECTS

### scAnnex and bulkAnnex

2026

- scAnnex: Built an automated Nextflow pipeline and R Shiny dashboard to standardize preprocessing, adaptive QC, and cell-type annotation for scRNA-seq datasets.
- bulkAnnex: Reproducible Nextflow workflow for bulk RNA-seq that integrates automated quality control, differential expression, and multi-database pathway enrichment.

### Genomics England Variant Engine CRUK Project

2025

- Built an automated Nextflow pipeline for clinical variant calling, and high-throughput reporting.

### XPAND EU Project

2024

- Harmonized scMultiome clinical datasets across 3 European hospitals for therapeutic HSC characterization. Patent pending.

## LEADERSHIP & TEACHING

Designed and taught courses for 100+ researchers

- scMultiome analysis and integration: workflow management (PALS Summer School) [2026]
- Data Analysis with R: Introduction and Basic Statistics (Navarrabiomed) [2024]
- Introduction to Omics Data Analysis: Transcriptomics (Navarrabiomed) [2024]
- Founded and coordinated 2 cross-disciplinary biotechnology book clubs. (Kaust) [2023]

## HARD SKILLS

- R, Linux, Python, Groovy
- SQL
- Nextflow
- Git - Github
- Machine Learning
- Big Data
- Containerization
- AWS
- Project Management

## SOFT SKILLS

- Adaptability
- Cross-Functional Collaboration
- Problem-solving
- Agile Management
- Scientific Communication
- Leadership

## LANGUAGES

- Spanish
- English
- Galician