Gaston **Rijo De León**

Data scientist - Bioinformatician ·

Paris,France

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Summary

I am a Scientific Programmer with over 7 years of experience, with a special focus in omics datasets. I have been involved in statistical data analysis, designing and implementing cutting-edge machine learning algorithms, specializing in areas such as medical, functional, and population genomics. I have worked extensively with time series analysis applied to sequence-based genomic data and Natural Language Processing (NLP) through web scraping projects. My academic research has focused on applying machine learning models to open-source and novel high-dimensional biological data in order to extract biologically meaningful information. I excel at crafting scalable and efficient bioinformatic pipelines, seamlessly integrating them into ecosystems to handle large-scale data with precision. In terms of technical proficiency, I am well-versed in Nextflow, Python, SQL, Keras, AWS, and Docker.

Skills

SQL & Database Management	SQL, MySQL, SQLite, LIMS
Data Engineering & Analytics	Pandas, NumPy, Data Pipeline Development
Machine Learning & Data Science	Scikit-learn, PyTorch, TensorFlow
Programming & Development	Python - OOP, R - OOP, Bash, Git, Best Practices
Cloud & Infrastructure	AWS, High-Performance Computing, Slurm, Docker, Cloud Workflows
Data Visualization & Reporting	Jupyter, Quarto, LaTeX, Plotly, D3.js, Matplotlib, ggplot
Bioinformatics Tools	Nextflow, Bioconda, Bioconductor, Snakemake, GATK, Samtools
Computational Biology	NGS, scRNA-seq, GWAS, Variant Calling, Phylogenomics, Genome Assembly, Long-Read Sequencing
Languages	Spanish (Native), English (C2), French (B2), Poruguese (A2)
Transferrable	Project Management, Critical Thinking, Effective Communication, Emotional Intelligence

Work Experience

Human Evolutionary Genetics Unit, Institut Pasteur

Paris, France

PhD contract

October 2021 - November 2024

- Implemented mathematical, statistical, and ML models for inference in population genomics
- Involved in genetic epidemiology analysis of Polynesian populations
- Developed automated and well-documented bioinformatic workflows
- Led a large-scale Whole Genome Sequencing project involving over 2,000 samples
- Integrated open-access genomic data for optimized inference
- Managed large scale epidemiological and genomic databases using SQL and LIMS

Learning Planet Institute

Paris, France

Teaching Associate

October 2021 - June 2022

- Taught project management and grant writing to Digital Science M2 students

Universidad de la República - Institut Pasteur de Montevideo

Montevideo, Uruguay

Research Associate

May 2017 - July 2021

- Assembled the first long-reads genome of *Trypanosoma cruzi*
- Chloroplast genome assembly of Paspaulum genus
- Sequence-based statistical analysis of genome composition in flatworms
- Bulk RNA-seq analysis of *Bos taurus* viral susceptibility
- GWAS analysis of *Bos taurus* viral susceptibility
- Benchmarked Machine Learning methods for population genomics using Nextflow and Python

Universidad de la República

Montevideo, Uruguay

Teaching Associate

May 2017 - July 2021

- Python, R and bash programming for undergraduate students
- Quantitative genetics and animal breeding
- Multivariate statistics and machine learning
- Elemental and advanced genetics for medical students
- Public Health case studies

Education

Université de Paris Cité - Institut Pasteur
Paris, France

Ph.D. Genomics, Bioinformatics and Computational Biology — *October 2021 - November 2024*

- Doctoral thesis: "Understanding the demographic and adaptive history of Polynesians: genomics in health and disease"
- Inferred Polynesian genomic demographic history using mathematical and statistical models
- Acquired general competency as a project manager

Universidad de la República - Institut Pasteur de Montevideo
Montevideo, Uruguay

M.Sc. in Bioinformatics — *January 2018 - July 2021*

- Master thesis: "Detection of selection signatures in recently admixed populations"
- Developed and implemented a method for detecting natural selection signatures in population genomics databases
- Acquired general competency as a software developer

Universidad de la República
Montevideo, Uruguay

B.Sc. in Biochemistry — *February 2013 - December 2017*

- Bachelor's thesis: "*in silico* analysis of transposable elements in *Trypanosoma cruzi*"
- Performed statistical and model-based analysis of genomic data

Extracurricular Leadership Experience

Community garden - Jardin du Monde, Cité Internationale Universitaire de Paris
Paris, France

Commitee Member — *September 2023 - Current*

- Parcel allocation supervision
- Seed bank manager
- Management of harvesting times in an urban setting

Piplettes Magazine, Institut Pasteur
Paris, France

Head of Submissions — *February 2023 - December 2024*

- Streamlined the article submission pipeline, reducing submission to publication time to 30 days
- Managed and supervised the publication of over 10 scientific communication articles

Masters in Bioinformatics, Universidad de la República
Montevideo, Uruguay

Student Representative — *February 2019 - December 2021*

- Jointly developed and implemented the 2020 academic curriculum
- Led Faculty-Student mediation efforts