Guillermo Chumaceiro

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in guillermo-chumaceiro ○ guillechuma

Summary

Software Developer with a background in biotechnology and computational biology, experienced in building production-ready data intensive pipelines, backend tooling, and data platforms. Skilled in Python, R, Bash, cloud infrastructure, CI/CD, and workflow orchestration.

Experience

Expert Bioinformatician, Sequentia Biotech – Barcelona, Spain   Nov 2022 – present
- Core contributor to the MICK Translational Platform for Personalized Medicine.
- Designed and integrated **Nextflow pipelines** for AWS and on-premise execution, enabling automated, large-scale NGS data analysis.
- Reduced processing time by 50% in long-read taxonomic profiling through algorithmic and code optimizations.
- Developed automated testing across Python, R, and Bash codebases, including unit, integration, and end-to-end tests.
- Implemented **CI/CD pipelines (Bitbucket)** to improve release reliability, code quality, and deployment confidence.
- Built a production-ready **R package** supporting advanced microbiome analysis.
- Conducted comprehensive microbiome data analyses, transforming complex datasets into actionable insights for clients.

Guest Researcher, CEPLAS – Cologne, Germany   Feb 2022 – July 2022
- Conducted master's thesis research in Alga Zuccaro's group at the University of Cologne.
- Analyzed root endophytic fungal transcriptomes to study plant colonization mechanisms.
- Optimized a de novo transcriptome assembly pipeline for metatranscriptomic data.

Undergraduate Researcher, Instituto de Salud Carlos III – Madrid, Spain   June 2020 – Sept 2020
- Collaborated on a bioinformatics study of intergenic regions in hypervirulent *Klebsiella pneumoniae* strains.
  - Identified SNPs associated with hypervirulence using Python.

Skills

Languages: Python, R, Bash, SQL, Go

Platforms & Tools: Nextflow, Docker, AWS, Git, CI/CD, Linux, Google Cloud

Focus Areas: Scientific software, backend tooling, workflow orchestration, testing, data pipelines

Publication

A Comparative Analysis of the Ocular Microbiome: Insights into Healthy Eyes and Anophthalmic Sockets   Sept 2024

Francisco Zamorano-Martín, ***Guillermo Chumaceiro***, Pablo Navarro-Torres, Davide Borroni, Facundo Urbinati, Ángel Molina, Andreu Paytuví-Gallart, Carlos Rocha-de-Lossada

10.3390/microorganisms12112298 (Microorganisms)

Education

Polytechnic University of Madrid (UPM), MS in Computational Biology   July 2021 – July 2022
- GPA: 9.4/10.0

University Francisco de Vitoria (UFV), BS in Biotechnology   Sept 2017 – June 2021
- GPA: 9.2/10.0