Gabriel Mateus Bernardo Harrington

Data Analyst / Computational Biologist

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Summary

Scientist-turned-analyst with 7+ years' experience in high-dimensional biological data analysis, reproducible research, and statistical modelling. Expertise in R, bash, super computing and omics data (transcriptomics, proteomics, EHR). Passionate about clean, reproducible pipelines and cross-functional collaboration. Seeking roles where I can apply my analytical skills to impactful, real-world problems.

Employment

Cardiff University, UK — *Research Associate (Bioinformatician)* - 2021–Present
- Analysed multi-omics data in Alzheimer's research; developed pipelines using R and bash on HPC.
- Delivered training in reproducibility, version control, and workflow automation.

Bionics Institute, Australia — *Research Assistant* - 2016–2018
- Led wet lab work on optogenetic project for cochlear implants.
- Lab work included animal handling, immunohistochemistry, microscopy, surgery and tissue sectioning.

Selected Projects & Achievements

- **Alzheimer's Disease single-cell RNA-seq analysis**: Built reproducible workflows to analyse single nuclei sequencing data, including differential expression, genetic risk and pseudotime analysis.
- **Spinal Cord Injury Prognostic Modelling**: Applied multilevel and classical statistical models to proteomic and EHR data.
- **Shiny Applications**: Created interactive apps for transcriptomic and prognostic model exploration.
- **Research Software Champion**: Led reproducibility training and open science efforts across the UK DRI.
- **Community Leadership**: Chaired the UK DRI ECR Informatics Committee.

Skills

Programming & Tools: R, Bash, SQL, Git, Nextflow, Docker/Singularity, SLURM, Quarto/RMarkdown, Snakemake (basic), Python (intermediate)

Data Analysis: Genomics, Proteomics, Electronic Health Records, Bayesian/Frequentist Statistics, Differential Expression, Data Visualisation
Workflows & Reproducibility: GitHub/GitLab, Containerisation, HPC job scheduling, Workflow automation, FAIR data practices
Communication & Teaching: R training for MSc students, workshop delivery, cross-disciplinary collaboration
Languages: English (native), Portuguese (intermediate), Greek (beginner)

Education

PhD in Biomedical Engineering — Keele University, UK (2018–2021)
Focus: Prognostic modelling in spinal cord injury using omics and EHR data.

BSc (Hons) Biological Sciences — Lancaster University, UK (2013–2016)

Awards & Fellowships

- DPMCN ECR TADA Travel Grant – £750 (2025)
- Associate Fellowship – Advance HE (2024)
- Winning Team – DEMON Network NeuroHack (2022)
- Winning Team – Race Against Dementia Accelerator (2021)
- EPSRC CDT Grant – £5000 (2021)
- Duke of Edinburgh Silver Award (2010)

Selected Publications

- Bernardo Harrington, G. M. et al. (2024). *A Comprehensive Proteomic and Bioinformatic Analysis of Human Spinal Cord Injury Plasma Identifies Proteins Associated with the Complement Cascade and Liver Function as Potential Prognostic Indicators of Neurological Outcome*. Journal of Neurotrauma
- Bernardo Harrington, G. M. et al. (In prep). *Paired Vascular-Parenchymal Single Nuclei Sequencing Reveals Perturbed Endothelial-to-Mesenchymal Transition in Alzheimer's Disease*.
- Full list: ORCID Profile

Outreach & Teaching

- Lecturer for MSc Bioinformatics students (R programming, stats, reproducibility)
- Trainer at EMBL course on dementia research
- Hosted livestream fundraiser for ARUK (~10K views)
- Speaker at international and UK-based research conferences