Maria Alonso

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SUMMARY

Computational biologist with six years of experience building statistical models for single-cell sequencing data. Looking for a postdoctoral position bridging machine learning and functional genomics.

PUBLICATIONS

- [2025] **A Sparse Variational Model for Single-Cell Trajectory Inference**
  Nature Methods
  Main contributions: Designed the model, ran all experiments, wrote the manuscript
- [2023] **Benchmarking Batch-Correction Methods on Noisy scRNA-seq Panels**
  Bioinformatics
  Main contributions: Curated the benchmark datasets, implemented three baseline methods
- [2022] **Graph Neural Networks for Cell-Type Annotation**
  ISMB
  Main contributions: Co-designed the architecture, ran ablation studies

EDUCATION

Computational Biology, PhD - 2024

University of Edinburgh, UK - **GPA:** N/A
Thesis Variational inference for single-cell trajectory reconstruction
Achievements

- Awarded the Wellcome Trust PhD Studentship
- Best poster award, ISMB 2022

Mathematics, BSc - 2019

Universidad Autonoma de Madrid, ES - **GPA:** 3.9/4.0
Thesis Statistical models of gene regulatory networks

RESEARCH EXPERIENCE

Postdoctoral Fellow / Sep 2024 - Present

Wellcome Sanger Institute - Cambridge, UK

- Developed a variational autoencoder for trajectory inference used across three ongoing atlas projects
- Mentored two rotation students on differential expression pipelines
- Maintained the lab's open-source single-cell toolkit (1,200+ GitHub stars)

Python · PyTorch · Scanpy · Snakemake · Statistics

Graduate Research Assistant / Sep 2019 - Aug 2024

University of Edinburgh - Edinburgh, UK

- Built the benchmark suite used to evaluate batch-correction methods across five public scRNA-seq datasets
- Co-authored the lab's graph neural network annotation pipeline

Graph Neural Networks · R · Bioconductor · Python

SKILLS

Programming Languages: Python, R, C++, Bash
Frameworks: PyTorch, Scanpy, Bioconductor, Snakemake
Other: Statistical modelling, single-cell genomics, grant writing, teaching

EXTRACURRICULARS

- Organizing committee, Edinburgh Computational Biology Seminar Series
- Reviewer for Bioinformatics and PLOS Computational Biology
- Volunteer instructor, Software Carpentry workshops