Jake Graham

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MSc Bioinformatics graduate with strong training in statistical analysis, machine learning, epidemiology, structural bioinformatics, and genomics. Experienced in conducting computational analyses with large biological and health-related datasets in collaborative research settings, with a strong motivation to contribute to translational research with real-world health impact.

Work Experience:

07/2024 – 09/2024 Bioinformatics Intern – Moa Technology, Oxford

- Identified, validated, and characterised sample mutations using IGV, an updated reference genome, and online databases to elucidate the mode of action of candidate herbicides.
- Critically analysed and presented a population genomics research paper to an audience of diverse scientific backgrounds on the evolution of herbicide resistance in black-grass.
- Processed Illumina RNA-seq QC reports for company use

05/2023 – 07/2023 Research Intern – Institute of Immunology and Infection, University of Edinburgh

- Human RNA virus database work (led by Prof. Mark Woolhouse): Updated, expanded and analysed a database of human RNA viruses, identified newly reported species for inclusion, and visualised temporal and geographic trends in R and ArcGIS Pro.
- Scoping literature reviews (led by Prof. Francisca Mutapi): Examined how countries pivoted neglected tropical disease intervention strategies during non-NTD public health emergencies (e.g., Ebola, COVID-19) and the wider impacts of such crises on NTD programme delivery.

Skills:

Programming & Data Analysis:	*Python, R, Bash, SQL, Unix/Linux, Conda, Git, HPC environments; database management*
Bioinformatics:	*Structural bioinformatics for drug target discovery (Boltz-2, PyMOL, GNINA, ESM); Functional genomics (DESeq2, limma); Evolutionary genomics (BEAST, Tracer, TreeAnnotator); Infectious disease modelling; Variant calling (IGV)*
Machine Learning:	*Scikit-learn libraries; predictive modelling; classification/regression techniques*
Web & Software Development:	*PHP, JavaScript, HTML, CSS*
Data Visualisation:	*ggplot2; matplotlib; RShiny; ArcGIS Pro*
Productivity & Creative Software:	*Microsoft Office (Word, PowerPoint, Excel); Adobe Creative Cloud (InDesign, Photoshop, Illustrator); Vegas Pro*
Communication:	*Science and medical writing; stakeholder management; creative writing; conference/project presentations*
Organisation:	*Leadership experience; events management; working to deadlines*

Education:

09/2024 – 08/2025 University of Edinburgh – *MSc Bioinformatics* – **Distinction**

Modules (Grade): *Statistics and Data Analysis **(93%)**; Bioinformatics Programming and System Management **(72%)**; Introductory Applied Machine Learning **(79%)**; Functional Genomic Technologies **(76%)**; Infectious Disease Epidemiology **(75%)**; Using R for Data Science **(73%)**;*

	Technology Entrepreneurship and Commercialisation ***(66%)****; Introduction to Website and Database Design* ***(78%)****; Research Proposal* ***(69%)***
	Thesis: Predicting Novel Enzymes in Trypanosomes Using Protein Language Models and Molecular Docking **(74%)**
09/2021 – 05/2024	University of Edinburgh – *BSc (Hons) Biomedical Sciences* (with second year entry) – **First class**
	Modules (Grade): *Biomedical Sciences 2* ***(78%)****; Genes and Gene Action 2* ***(79%)****; Cells to Organisms 2* ***(82%)****; Microorganisms, Infection and Immunity 2* ***(79%)****; Biomedical Sciences 3* ***(74%)****; Physiology 3* ***(75%)****; Pharmacology 3* ***(63%)****; Medical Microbiology 3* ***(71%)****; Neuroscience 3* ***(74%)****; Data Analysis for Health and Biomedical Sciences* ***(80%)****; Global Health and Infectious Diseases* ***(76%)****; Biomedical Sciences Core* ***(72%)***
	Dissertation: Phylogeographic Analysis of the Global Spread and Evolution of African Swine Fever Virus **(73%)**
09/2016 – 06/2021	Wellington College, Crowthorne – *IB Diploma* – **45/45 (ATAR equivalent: 99.75 - 99.95)**
	Subjects: HL *Biology, Chemistry, History*; SL *French, Maths, English*
09/2013 – 06/2016	West Island School, Hong Kong – IB Middle Years Programme (MYP)

Publications:

Rossi, G., Leitch, E.C.M., **Graham, J.**, Biccheri, R., Iscaro, C., Torresi, C., Lycett, S.J., Feliziani, F. and Giammarioli, M. (2025). A phylogenetic contribution to understanding the panzootic spread of African swine fever: from the global to the local scale. Virus Evolution. [online] doi:https://doi.org/10.1093/ve/veaf103.

Interests and Achievements:

- President of the Edinburgh University Engineers Rugby Club, 2024-25
- College: Head of House, Head of Science Magazine, Honorary Academic Scholarship

Workshops & Courses:

Pfizer UK Molecule to Market Job Simulation on Forage - January 2026

- Job simulation focused on launching a hypothetical new medicine
- Examined development pipeline of new medicines
- Identified the clinical care pathway and requirements of regulatory bodies
- Researched the needs of specific patient and customer types