

BENJAMIN KEANE

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PERSONAL STATEMENT

A Passionate and detail-oriented candidate with a robust background in bioinformatics and a proven track record of leveraging complex datasets to drive actionable insights and innovations. Equipped with a strong foundation in Python, R-Studio, machine learning, and data visualization, I excel in transforming raw data into meaningful narratives that inform decision-making in the life sciences. My expertise includes genomics, transcriptomics, and the development of predictive models, all aimed at advancing healthcare solutions and scientific understanding. Adept at collaborating with interdisciplinary teams, I am committed to continuous learning and dedicated to applying my skills to solve challenging biological and medical problems.

KEY ACHIEVEMENTS

- Serving as a computational researcher within the Haniffa lab after being awarded funding from the Lister Institute of Preventative Medicine.
- Being awarded the NCL+ award for my 50+ hours of volunteering as an executive committee member of the Newcastle Biological Society and Newcastle University Water polo team.
- The Office for Students Artificial Intelligence (AI) and Data Science Scholarship Awardee (2023).

EDUCATION

PhD in AI Development for Novel Cancer Biomarker Discovery: Newcastle University, Newcastle Upon Tyne, UK (September 24-Present)

- **Key Projects:** “Simulating Multi-omic data to develop cutting edge Neural Networks” and “Developing Neural Networks to discover novel prognostic and predictive biomarkers within Cutaneous Melanoma”
- **Skills developed:** Research design, end-to-end machine learning workflow implementation, scientific writing for a range of audiences, interdisciplinary collaboration between statisticians, clinicians and bioinformaticians, project management and multi-omics data analysis.

MSc Bioinformatics/Data Science for the Life Sciences: University of Birmingham, Birmingham, UK (September 2023 – September 2024)

- **Key Projects:** “Personalised bladder cancer drug repurposing by leveraging computational methods and transcriptomic data”, “Investigating Machine Learning applications to predict metabolic diseases using easily accessible clinical data”, and “Utilising Machine Learning Methods to Analyse UK Environmental Monitoring Data to Improve Regulatory Management of Chemical Pollutants”
- **Skills developed:** Coding in Python and R-studio, analysing complex biological data, applying machine learning algorithms to data to discover insights, public speaking/communication (conducting several conference presentations), and co-operating in multidisciplinary teams.

BSc (Hons) Cellular and Molecular Biology (2:1): Newcastle University, Newcastle, UK (September 2018 - July 2021)

- **Key Projects:** “Production of a Computational Model of Triglyceride Production in *Chlamydomonas reinhardtii* for Biodiesel Production.”, “Using a Structural Equation Modelling to Model the Airborne Transmission of SARS-Cov-2 in a Supermarket”, and “Genome Analysis of the Novel Bacterial Strain TCGB6 to Investigate Biofertilisation Potential”.
- **Skills Developed:** Linux/Bash command to use Genomic tools, Aseptic technique, Scientific report writing, and laboratory skills in microscopy and molecular biology.

PERSONAL EXPERIENCE

FUJIFILM DIOSYNTH BIOTECHNOLOGIES – Manufacturing Scientist (September 2021 - September 2023)

FUJIFILM Diosynth Biotechnologies is a Contract Development and Manufacturing Organisation within the biotechnology/biopharmaceutical industry, they produce life-changing medicines and vaccines to make the world a healthier place.

- Supported the successful implementation of SAP-HANA into the manufacturing workflow by overseeing the training of colleagues and performing pressured tasks within the system which resulted in the successful release of several commercial batches on time.
- Played a key role in environmental monitoring, Up and Downstream bioprocessing, and reviewing batch manufacturing records which saw the successful completion of the COVID-19 vaccine manufacturing campaign.
- Oversaw the integration of improvement projects into the company such as text-to-speech algorithms for standard operating procedures or changing cleaning procedures which improved training and compliance to Good Manufacturing Practice protocols.

Haniffa Lab: Newcastle, UK – Computational Research Intern (August 2021 - September 2021)

The Haniffa Lab, based in Newcastle University Biosciences Institute, apply disruptive omics technologies to study human health at the single-cell level, They leverage computational methods to understand the immune system. Some notable projects from the lab include the Human Cell Atlas, the COVID-19 project that strived to understand the immune response of COVID-19 patients during the pandemic to save lives.

- Generated a bioinformatic pipeline to analyse and visualise transcriptomic data from patients with the genetic condition STAT3-GOF (gain of function), resulting in a discovery that Mucosal-associated invariant T cells could be associated with the disease, leading me to report my findings.
- Gained hands-on experience with single-cell RNA-seq data analysis using packages such as Seurat.

Newcastle University: Newcastle, UK – Biological Student Ambassador (July 2019 - August 2021)

Newcastle University is a world-class institution, ranked among the top 110 universities globally according to the QS World University Rankings. As a proud member of the elite Russell Group, Newcastle University is renowned for its high-quality research, which contributes to solving some of society's most pressing issues such as climate change, antimicrobial resistance, and cancer.

- Headed a dedicated team of four Student Ambassadors who served as the main point of contact for prospective students at welcome days, recruitment events and campus tours.
- Played a key role in materialising, overseeing and maintaining specialised activities for the University's summer school programme; delivered several 30-minute sessions to groups of up to 35 students at a time, helping to inspire the next generation of biological specialists.

SKILLS AND INTERESTS

- **Volunteering:** St John Ambulance Youth helper (October 2017-September 2018)
Supported several cadets through first aid courses and leading sessions in CPR.
- **Certifications:** Duke of Edinburgh's Silver Award, Level 2 pool lifeguarding qualification and, NCL+ award for volunteering.
- **Scientific Interests:** Drug discovery/development, applying machine learning to biological problems, cancer research, and epidemiology.