

# Samuel John Beales - Bioinformatician

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## Profile:

Keen bioinformatician with proven research group experience in Python, R, and shell scripting. With a commitment to pursuing an research related career, experience in creating single-cell sequencing pipelines gained from a six-month research project. Dedicated to professional development widening my skills with courses and personal projects. Now seeking an interesting Bioinformatics roles to apply my expertise.

## Education:

### September 2022 - July 2023 MRes Bioinformatics and Immunobiology Newcastle University

#### **Relevant Modules:**

##### **Bioinformatics for Biomedical Scientists:**

- High Throughput Sequencing (HTS) applications and sequence alignment, alongside handling and analysis of HTS data.
- Running bioinformatics analysis at the Linux command line, and practical approaches to pathway analysis.
- R statistical programming framework and Bioconductor, as well as statistical analysis and visualisation of HTS data using R.
- Machine Learning and Artificial Intelligence in bioinformatics, as well as custom scripting.

##### **Applied Immunobiology of Human Disease:**

- Basic concepts in Immunology, features and mechanisms immunologic tolerance, auto-immunity, and tumour immunity.
- Manipulation of innate immunity for immunotherapy, as well as new developments in cytometry-based technologies.
- Immunological Biomarkers: role in diagnostics, prognostics and theragnostics.

##### **Genetics of Common Disease:**

- Developed an advanced understanding genetic variation, complex disease, and the correct research strategies for their study. As well as use of computer packages for statistical genetic analysis.

##### **Research Skills and Principles for the Biosciences:**

- Planning and application of correct experimental design, statistical analyses, and computational resources.
- Practiced presentation skills and engaged in scientific discussion with a group of five peers.
- Refined IT skills with common tools such as Microsoft Word and Excel

#### **MRes project and skills:**

##### **January – July 2023 Lessons from nature - Using human developmental data to inform haematopoietic organoid design.**

- Extensive use of Python, and R in Single-cell analysis pipelines. Processing and analysing high throughput data.
- Detailed bioinformatics, genomics, and statistical subject knowledge. Focusing on single cell analysis of 900,000 cells and 40,000 genes in cancer datasets. Utilising good statistical practice and application of machine learning algorithms.
- Shell scripting for management of a Linux virtual machine and use of singularity containerisation.
- Implemented bioinformatics techniques in cancer research environment.
- Resolved non-routine problems with creative solutions, such as personal virtual machine set-up for cloud computing.
- Advanced verbal and written communication with colleagues alongside multidisciplinary interaction and collaboration.

### 2018-2022 BSc (Hons) Biology (Cellular and Molecular) 2:1 University of Huddersfield

#### **Relevant Modules:**

- **Mechanisms and Pathology of Cancer and other Chronic Diseases:** Knowledge of the aetiology, pathogenesis, diagnosis and treatment of major chronic diseases focusing on cancer and its therapeutic treatments.
- **Genomics:** Familiarised with High-throughput methods and applications, with detail into technical aspects and practical analysis experience of high-throughput data using publicly available databases and resources.
- **Applied Molecular Genetics:** In depth study and application of methods and applications of molecular genetics.
- **Research skills 2:** Developed general research skills including writing, presentations, using statistical analysis and teamworking.
- **Research Project, Analysis of the relationships between longevity related genes in C. elegans:** Applied molecular methods and maintained lab environment, as well as writing a comprehensive scientific report on the findings.

### 2011-2018 St Bede's Catholic School and 6th Form College

A-level: Biology (C), Chemistry (C), Psychology (C), Core Maths (B).

GCSE: 7 GCSEs at A-C: Including Maths and English.

## **Continued Professional Development:**

### **2023-2024 Further omics, statistics and clinical data in R, University of Glasgow**

- Parametric and non-parametric tests, P values, survival curves, and power calculations.
- Custom functions and workflow scripting, visualisation of plots, and normalisation of RNA-seq data in R.
- Identifying and exploring DE signatures, widening my understanding of DE data analysis.
- K-means clustering unsupervised machine learning and its application in scRNA-seq data.

### **2023-2024 Personal website development**

- Proactive setup of Windows Subsystem for Linux and shell scripting with Zsh to independently achieve goals.
- Personal projects display deeper interest and enthusiasm for learning and flexibility to work independently.

### **2024 Artificial Intelligence in Bioinformatics, Taipei Medical University**

- The fundamentals of AI and machine learning, with their application using Weka.

## **Coding languages:**

- Python – Advanced proficiency with large data analysis and machine learning focus.
- R – Intermediate proficiency with statistics and trajectory focus.
- Shell Scripting (Unix, Z Shell) – Intermediate proficiency with focus on containerization, VM and data management.
- HTML 5 – Novice proficiency focusing on web development.

## **Placement year**

### **September 2020 – August 2021 Lab Analyst, Lonza Group:**

- Operated in a busy microbiology lab gaining industry experience. Managing workload through self-motivated approach to preparing before large workloads. Ensuring reliable high standards are dependably maintained for all work.
- Learned and applied laboratory methods with a collection of specialist equipment.
- Performed complex technical tasks to a consistent high standard with attention to detail
- Maintained relevant safety regulations & procedures, including COSHH and risk assessment
- Planned and maintained own lab book, taking responsibility for own work and coordinated own schedule. Took initiative to resolve problems but sought advice where necessary.
- Analysed and investigated results with colleagues in a team to produce presentations and relevant reports, ensuring accuracy and developing good interpersonal skills.
- Presented project progress regularly to managers at weekly meetings, explaining complex information in presentations
- Mentored and supervised new staff in lab protocols as well as training colleagues in use of new technical equipment and techniques. As well as preparing new SOPs for that equipment and updating out of date SOPs.

## **Work experience: Voluntary**

### **April 2024 –May 2024 Volunteer, DWP**

- Resolving computational problems for customers. Examining labour market in a customer facing role, and liaising with colleagues to meet specific needs of customers.

## **Positions of responsibility**

### **September 2019-2022 Vice-President, University of Huddersfield Fencing Club:**

- Coached and managed weekly fencing sessions to ensure reliable and dependable practice for members, communicated with Students Union and organised club budget to maintain regular stock of functioning equipment for club use.

### **September 2018-2020 Academic Representative University of Huddersfield:**

- Worked to improve the quality of student experience, gathering feedback, attending meetings, and filing issues. Communicating effectively with staff and students.

## **References**

### **Research Supervisor:**

Simone Webb

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### **Personal tutor:**

Gavin Clowry

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