Samuel John Beales - Bioinformatician

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Early-career bioinformatician with an MRes in Bioinformatics and Immunobiology and hands-on experience processing and analysing multi-omics and disease datasets using R, Python, and shell scripting. Experienced in building reproducible pipelines for single-cell and bulk RNA-seq data, and motivated to create multi-omic methodologies. Strong collaborator with research experience, and a strong foundation in bioinformatics and Cell Biology. Enthusiastic to apply and widen my bioinformatics skillset with a dynamic and interdisciplinary group.

Technical Skills:

- Postgraduate degree in bioinformatics within a multidisciplinary research environment.
- Experienced in a Linux cloud computing environment and in applying command-line applications.
- Expertise in Python and R coding in bioinformatics, and in applications of common libraries and tools (ScanPy, NumPy Matplotlib)
- Experienced usage of workflow reproducibility, version control, and containerization (Snakemake, Singularity, Git)
- Expertise in use of data visualisation tools and libraries in both Python and R (Matplotlib,Seaborn, and ggplot2)

Education:

September 2022 - July 2023 MRes Bioinformatics and Immunobiology Newcastle University

MRes project and skills:

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

- Implemented bioinformatics pipelines for scRNA-seq data of up to 900,000 cells and 40,000 genes. Ensuring workflows were modular and reproducible using Conda and Singularity for analysis alongside Git version control. Utilizing ML clustering techniques (KNN, k-means, UMAP) for cell type identification.
- Launched a cloud computing Linux machine for implementing command-line applications and efficiently managing large data.
- Utilised a variety Python and R packages including Seurat, Bioconductor packages, Scanpy, Monocle3, etc.
- Developed expertise in Python, R, and shell scripting for pre-processing, quality control, and differential expression (DE) analysis
- Immersed fully into a multidisciplinary research group, attending lab and software engineer weekly meetings, as well as learning from experienced group members.
- Integrated immunological and transcriptomic insights to understand haematopoietic gene expression patterns.
- Rapidly acquired many technical and scientific concepts and skills independently.

Relevant Modules:

Bioinformatics for Biomedical Scientists:

- Next generation sequencing (NGS) applications and sequence alignment, alongside handling and analysis of NGS 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 NGS data using R.
- Best practices for version control software and custom scripting.

Applied Immunobiology of Human Disease:

- Concepts of Immunobiology and mechanisms of human disease

Genetics of Common Disease:

- Applied command-line applications (Plink, Merlin) to analyse and omics datasets.
- Developed an advanced understanding genetic variation, complex disease, and the correct research strategies for their study.

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

Relevant Modules

- **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. Performed statistical analysis with R.
- **Cell Biology:** Studied advanced cell biology including practical experience in sub-cellular fractionation and enzyme marker identification.
- **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. Delved into applications and analysed omics data with R.

Personal Projects and Courses:

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

- Advanced uses of statistics and bioinformatics in analysing genomics data with RStudio.

2024 Artificial Intelligence in Bioinformatics, Taipei Medical University:

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

2025 Snakemake basic and advanced tutorials:

- Explored the breadth and depth of Snakemake features for use in developing NGS pipelines.

2023-present Personal website and WSL setup for independent projects:

- 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.
- Setup Raspberry Pi Zero with external SSH for cloud storage projects.

Work Experience:

October 2024 –Present Microbiology Analyst, Latis:

- Practical lab experience processing and analysing 150 samples a day with attention to detail, working to deadlines as an efficient team. Working flexibly and maintaining a positive and supportive attitude.
- Maintained a positive and supportive attitude within the lab, and flexibility to work alternative hours to support others.
- Further developed excellent communication skills and honed a team mentality.
- Improved Attention to detail following precise methods with accuracy and reliability.

September 2020 – August 2021 Lab Analyst, Lonza Group:

- Developed communication skills and worked as part of a multidisciplinary team.
- Mentored new staff in laboratory methods, and produced standard operating procedures for new pieces of lab equipment.
- Ensured high standards of method accuracy and producing methods.

Teaching Experience

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

- Coached and managed weekly fencing sessions to ensure reliable and dependable practice for 16 members, produced engaging training exercises and resources to improve engagement.
- Organised funding applications as well as producing advertisements for events with strong organisational skills and ability to work to deadlines.

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.

December 2016-2018 Young Leader, 1st Dipton Scout and Guide Group:

- Planned activities and managed a group of 20 children.

References

Research Supervisor:
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