

JAMES WILSENACH

Biomedical Machine Learning Researcher & Statistician

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📍 London, UK

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EXPERIENCE

Postdoctoral Research Associate: Computational Biology

Alan Turing Institute, Mentors: Sebastian Ahnert

📅 Oct 2023 – Ongoing

📍 Health Division

- Early-stage development of tools for Large Language Model (LLM)-based analysis and validation of biomedical ontologies
- Designed new gene regulatory network approaches for alternative splicing
- Supervised PhD and undergraduate students on gene networks, protein folding and genomic LLMs
- Worked closely with experimentalists to develop analysis software for transcriptomics and imaging data across multiple cell lines

Postdoctoral Research Fellow: Focal Epilepsy

University College London, Mentors: Karl Friston, Richard Rosch

📅 Jan 2022 – Oct 2023

📍 Wellcome Centre for Neuroimaging

- Designed machine learning tools to inform medical intervention in patients with refractory focal epilepsy (part of the EU's Human Brain Project)
- Worked with doctors to build personalised machine learning pipelines to inform epileptic care
- Streamlined healthcare databasing, storage and anonymisation

Research Intern: Epilepsy Modeling

Neuroelectronics Corporation, Mentor: Giulio Ruffini

📅 Oct 2020 – Jan 2021

📍 Remote, Barcelona

Innovated databasing and machine learning analysis tools for electrical stimulation therapies for epilepsy and 3D neuronal modeling

Teaching Roles

Various Universities

📅 Jan 2016 – Sep 2021

📍 Oxford, Stellenbosch

Taught courses on applied network statistics, logic and applied mathematics at Oxford and Stellenbosch universities.

EDUCATION

DPhil Statistics

Supervisors: Charlotte M. Deane, Gesine Reinert

📅 Sep 2017 – Apr 2022

📍 University of Oxford

Computational network models for molecular, neuronal and brain data in the presence of long range dependence

Developed machine learning methods to remove systematic bias in protein, and brain networks with applications in drug discovery and treatment

MSc Informatics: Machine Learning (1st, Top of Class)

Supervisors: Douglas Armstrong, Ian Simpson

📅 Sep 2016 – Aug 2017

📍 University of Edinburgh

Differential (Expression) Network Analysis of the Postsynaptic Density in Development & Ageing

BSc (Hons): Maths, Stats, Genetics (1st, Top of Class)

University of Stellenbosch, University of Cape Town

📅 Jan 2011 – Dec 2015

ABOUT ME

James is a biomedical data scientist with experience in neuroscience, molecular biology, and machine learning. He has a special interest in statistical rigor in the health sciences, as well as philosophy and ethics. Personal projects include Human-Computer Interface development for persons with severe mobility and mental impairments.

TECHNICAL SKILLS

Data Science

Statistics, Neural Networks (e.g. Transformers), Bioinformatics

Programming

Python, Pytorch, OWL, R
Basic: C++, SQL, HTML

Biomedical Sciences

Molecular Biology, Neuroscience, Experimental Design

AWARDS



BR41N.IO Competition Winner

Won a design competition with an application to help persons with disabilities access complex user interfaces using brain signals



Top Performing Student

MSc Informatics with specialties in machine learning and neuroinformatics



Alan Turing Enrichment Scheme

Turing Centre for Artificial Intelligence PhD Enrichment Scheme

PUBLICATIONS

Research articles and conference presentations on topics in proteomics, computational biology and neurology