

# JAMES WILSENACH

## Biomedical Researcher & Data Scientist

@vilsnk@gmail.com

📍 London, UK

🌐 jameswilsenach.github.io

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## EXPERIENCE

### Research Fellow

#### University College London

📅 Jan 2022 – Ongoing

📍 Wellcome Centre for Neuroimaging

- Producing modelling tools to inform medical intervention in patients with pharmacoresistant focal epilepsy (part of a EU-wide collaboration)
- Work with doctors to produce a personalised statistics pipeline for patients from seizure recordings
- Manage data flows and anonymisation of sensitive health care records

### Research Intern

#### Neuroelectrics Corporation

📅 Oct 2020 – Jan 2021

📍 Remote, Barcelona

- Produced databasing and machine learning analysis tools for electrical stimulation-based epilepsy therapies
- Advised on construction of realistic 3D neuron models
- Created personalised networks of brain connectivity from patient MRI image data

### Teaching Roles

#### Various Universities

📅 2016 – 2021

📍 Oxford, Stellenbosch

Taught courses on applied network statistics in the Department of Statistics, University of Oxford as well as introduction to logic and applied mathematics courses at the Departments of Mathematics and Engineering at the University of Stellenbosch.

## TECHNICAL SKILLS

### Data Science

Machine learning, Applied Statistics, Simulation, Bayesian Methods

### Programming

Python, MATLAB, R, C++, HTML

### Biomedical Science

Neuroscience, Molecular Biology, Experimental Design

## EDUCATION

### DPhil Statistics

#### University of Oxford

📅 2017–2021

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

### MSc Informatics: Machine Learning

#### University of Edinburgh

📅 2016 – 2017

### BSc (Hons): Mathematics, Statistics, Genetics

#### University of Stellenbosch, University of Cape Town

📅 2011 – 2015

## ABOUT ME

James is a biomedical researcher with wide-ranging experience in data science, biology, and medicine. He has a special interest in publication practices in the health sciences and quantitative analysis of biomedical and public health research using machine learning and statistical meta-analysis to uncover bias.

## AWARDS



### BR41N.IO Competition Winner

Designed an application to help persons with disabilities access visually complex user interfaces using a Brain Computer Interface.



### Commonwealth PhD Scholarship

Awarded on the basis of providing computational drug discovery and biomedical tools to enhance research in developing countries.



### Epidemiology Modelling Clinic

Attended clinic for Meaningful Modelling of Epidemiological Data (MMED), focussing on developing public health, modelling and presentation skills.



### Alan Turing Enrichment Scheme

Turing Centre for Artificial Intelligence PhD Enrichment Scheme

## INTERESTS

Research & Legal Ethics

Linguistics

Martial Arts (Karate)

Music (Harmonica)

## PUBLICATIONS



### Journal Articles

- “Ranking of communities...,” *Applied Network Science*, 2022.
- “Evolutionary fields...,” *Physical Review E*, 2017.



### Conference Proceedings

- “Neuron tree construction...,” in *Quantitative BioImaging*, 2020.
- “Commfinedwalker: Controlling for inspection bias...,” in *COSTNET*, 2018.
- “The applicability of field theories in the population sciences,” in *MPDE*, 2017.