



# Julia Wood

Brisbane, QLD, Australia

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*I am a behavioural neuroscience PhD candidate with data analytics skills (R, Python) and 7 years of R&D industry experience creating innovative solutions for customers. I am a self-learner, a critical thinker, and a problem solver, and I am keen to transfer my skills to a data analytics role, to create data-driven solutions.*

## Technical Skills

**Proficient** R, Microsoft Office

**Competent** Python, Data Analysis and Visualisation, Mixed Effects Models, Generalised Linear Models, PsychoPy

**Novice** GitHub, MNE-Python, Data Simulation, Shiny, LaTeX

## Data & Programming Projects

Project	Packages	Objective
Non-invasive brain stimulation (NIBS): effect on electroencephalography (EEG) power	NumPy, pandas, MNE-Python, os, matplotlib	Estimate treatment effects on the power spectral density of time series (EEG) data over time, compared to placebo.
NIBS: effects on perception & learning over time	tidyverse (dplyr, tidyr & ggplot2), lme4, MASS, nnet, broom.mixed, lmerTest, boot	Estimate treatment effects on a variety of response variables (proportions, counts, response times, time of day, ordinal survey responses) from different distributions (Gaussian, Poisson, inverse Gaussian, von Mises, ordinal logistic) over time, relative to placebo, using linear and generalised linear models. Where applicable, obtain estimates and their confidence intervals on the natural scale via non-parametric bootstrapping.
NIBS: effects on motor-evoked potential (MEP) size & variability over time	tidyverse, gamlss, boot	Estimate treatment effects on the mean and within-individual variability of lognormal data (MEP peak-to-peak amplitude) over time, relative to placebo, using a joint model for location & scale.
NIBS: effects on MEP size & variability over time - model validation	tidyverse, lme4, gamlss, simMetric, broom.mixed, boot	Simulate realistic lognormal experimental data based on exploratory and descriptive analysis of a public dataset. Using these data, evaluate the performance of competing statistical models to compare changes in the mean and within-individual variability of lognormal data between treatment groups over time.

Project	Packages	Objective
NIBS: effect on rate of change of MEP size over time	tidyverse, nlme, boot	Estimate the treatment effect on the rate that a response variable (MEP peak-to-peak amplitude) increases over time towards a maximal plateau, relative to placebo, using a non-linear, one phase exponential association model.
Development of interactive learning tasks	PsychoPy, NumPy, pandas, os	Develop interactive learning tasks (associative word learning, sequential finger tapping) that present stimuli to participants and record responses (voice recordings, key presses) to assess cognitive and motor learning. This code is available on my <a href="#">GitHub</a> .
Shiny web application development	tidyverse, Shiny	Create a Shiny (R) app to interactively visualise international powerlifting competition results, using open-source data.

## Education

### The University of Queensland

2020–Present

*Doctor of Philosophy (Neuroscience)*

Brisbane, Australia

*Title: Sleep, Memory, and Non-invasive Brain Stimulation.*

*Supervisors: Dr Martin Sale, Dr Nicholas Bland, Dr Sonia Brownsett, Dr Cassandra Pattinson*

I am researching how non-invasive brain stimulation influences the quality of our sleep and how we form new memories.

#### *Key skills*

- Designing and conducting human research (e.g., designing studies, obtaining ethical clearance, recruiting participants, conducting experiments, analysing and reporting results).
- Teaching myself R and Python to achieve a variety of objectives (e.g., data analysis, data simulation, behavioural tasks).
- Managing sensitive data in compliance with ethical and intellectual property requirements.
- Disseminating technical information in a variety of formats to suit diverse audiences, including the general public.

#### *Outputs*

1. J Wood, N Bland, S Brownsett, M Sale (2021). *P163 Slow wave transcranial electrical stimulation during wake to investigate the consolidation of new learning*. [Poster Presentation]. *SLEEP Advances*, 2(Abtract Supplement), A74. <https://doi.org/10.1093/sleepadvances/zpab014.202>

### UK Society of Cosmetic Science

2016–2017

*Diploma of Cosmetic Science*

Brisbane, Australia (Remote)

Distinction

### Griffith University

2010–2012

*Bachelor of Forensic Science (Chemistry)*

Brisbane, Australia

GPA: 6.92/7

### *Achievements*

- Forensic Science Medal. *I was awarded this medal as the highest-achieving graduate in my bachelor's degree in 2012.*
- Graduation Ceremony Student Speaker. *I was the sole student selected to write and present a speech on behalf of my cohort at our graduation ceremony.*
- Griffith University Honours College Alumni. *I was invited to join this society as one of the top 2 percent of Griffith undergraduates demonstrating leadership and community engagement.*
- Golden Key International Honour Society Member. *I was invited to join as one of the top 15 percent of global undergraduates in 2012.*

## Employment

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### **Research & Development Chemist**

*Inline Cosmetic Laboratories*

Casual **Apr 2020–Current**

Full-time **Jul 2015–Apr 2020**

Beenleigh, QLD, Australia

I design and develop novel cosmetic products for a variety of brands. I transitioned from full-time to casual employment when I commenced my PhD in April 2020.

#### *Key skills*

- Independently gathering the information required to create and deliver innovative products on-time and within-budget.
- Managing multiple projects with different timelines simultaneously, in a fast-paced and consumer-focussed environment.
- Taking ownership of projects across their entire lifecycle: from conceptualisation to launch, and continual quality monitoring.
- Liaising with key project stakeholders to achieve a common goal, including colleagues, customers, and suppliers.
- Mentoring and training junior staff and conducting annual performance reviews.

### *Achievements*

- MForHer award (2022), Merck Life Sciences. *I received this award celebrating women in science due to my passion for research.*

### **Quality Chemist**

*Alphapharm*

Full-time **Jan 2013–Jun 2015**

Wacol, QLD, Australia

I performed chemical quality testing on pharmaceutical product prior to their release for sale.

#### *Key skills*

- Conducting experiments to test hypotheses.
- Investigating, documenting, and resolving out-of-specification results.
- Providing administrative support to senior staff during regulatory audits (US Federal Drug Administration).

## Referees

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*Available on request.*