

DAVID JOHN BAKER

[GitHub](#) — [LinkedIn](#)
[Google Scholar](#)

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SKILLS

- *Stats*: multi-level models, GLM (e.g. linear/logistic), Bayesian & NHST frameworks, latent variable models
- *Inference*: AB testing, causal inference, model selection and evaluation, philosophy and ethics of science
- *Machine Learning*: common supervised and unsupervised learning methods, recommender systems
- *Programming*: R (tidyverse, devtools, Stan, *lme4*), Python (pandas, conda, librosa), HTML/CSS
- *Tools*: git, unix, vim, org-mode, Quarto, markdown, L^AT_EX, relational databases (e.g. SQL, dplyr)
- *Domain Knowledge*: music perception, music theory, corpus analysis, computational modeling, memory

CAREER

Postdoctoral Research Associate 2022 – present
Institute of Logic, Language and Computation University of Amsterdam

- Developed **R packages** to **clean, test, and model data** from [Amsterdam Music Lab's online server](#)
- Managed and advised **four graduate students** (1 PhD, 3 Masters)
- Liaised with a team of [software engineers](#) to **develop online games using an Agile framework**
- Assisted teaching [undergraduate AI course](#) on **digital music/signal processing with Spotify API**

End Point Assessor, Consultant 2022 – present
Research Scientist Doran Scott Williams

- **Performed external assessment for 59** Level 7/Masters of Data Science Apprenticeships
- **Created** internal materials for Research Scientist, Data Engineering, Data Analyst standard

Postdoctoral Research Associate 2021 – 2022
Department of Psychology Goldsmiths, University of London

- **Designed** online experiments measuring **effectiveness of audio for sonic branding**
- **Modeled data from thousands of panelists** using mixed-effects regression models
- Scientific **research used as basis of product** for international market research company [Soundout](#)

Senior Research Associate 2020 – 2021
Department of Computing Goldsmiths, University of London

- Ran software user testing for **multi-university EU Horizons grant on music and web data**

Lead Instructor, Data Science 2019 – 2020
Flatiron School WeWork

- **Delivered daily lectures** on statistics, Python, R, machine learning to **over 70 adult learners**
- **Advised and assessed** portfolio capstone projects required for completion of program

EDUCATION

Doctor of Philosophy 2019
Music Theory; Minor Cognitive and Brain Sciences Louisiana State University, USA

Master of Science 2014
Music, Mind and Brain Goldsmiths, University of London, England

Bachelor of Music 2012
Instrumental Performance (Trumpet) Baldwin-Wallace Conservatory of Music, USA

EVIDENCE OF EXPERTISE

Top line descriptions of recent projects that give evidence to my expertise in...

Statistics, Experimental Design, Simulation, and Machine Learning

- Modeled data to musical serial recall task with [Bayesian, multi-level model in Stan](#)
- Delivered lecture for beginner data scientists on [introduction to clustering methods](#)
- [Fit and visualized multi-level model](#) to rating data using *lme4* package in R
- Wrote [simulation of game play and point distribution of matching pairs game](#) in base R during prototyping of game development
- Co-authored [paper modeling voting of Eurovision Song Contest using jury, contestant, audio data at ISMIR 2023](#)

Software

- Developed data pipeline R packages for Amsterdam Music Lab for cleaning, quality checking, converting JSON data to normalized database
- Obtained certification as [Posit tidyverse instructor](#)
- Examples of analysis code found on personal [GitHub](#)

Communication

- Regularly publishes academic, peer reviewed [research](#)
- Regularly present research at international conferences on music perception and cognition
- Served on Centre for Music and Science's Teaching Faculty for past two years at [University of Cambridge](#)
- Deliver guest lectures and talks to music perception research groups (e.g. Goldsmiths, University of London; University of Amsterdam; University of Cambridge)

Management

- Served on [Steering Committee](#) and as organizer for consortium of 40 Musicality and Genomics researchers
- Advised 3 Masters and 1 PhD student
- Responsible for coordination of software and hardware for data collection for six-week field trip in Republic of Congo

Commitment to Diversity, Equity, Ethics, and Inclusion

- Served as chair of Society for Music Perception and Cognition's [Anti-Racism and Equity Committee](#) founding member
- Organized and co-lead two publications [\[1\]](#) [\[2\]](#), symposium, and town hall on issues relating to anti-racism in music perception research
- Co-chair of [Ethics Work Group](#) for Musicality and Genomics Consortium
- Volunteered as WiMIR (Women in Music Information Retrieval) mentor 2021, mentee obtained job at Sony