

Dr. DAVID JOHN BAKER

Data Scientist, Educator

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David John Baker is a **data scientist** who solves problems for clients in need of someone who can both ask **meaningful musico-logical questions** as well as use the appropriate technical tools to answer them. Most of his work occurs at the overlap between **academic research** and **industry needs**, specifically in the world of **audio branding** and **music technology**. He also works extensively as an **educator**, having taught several university level courses, served as Lead Instructor of Data Science at an intensive coding bootcamp and is a certified RStudio tidyverse instructor.

WORK EXPERIENCE

April 2022 | **Postdoctoral Researcher, GOLDSMITHS, UNIVERSITY OF LONDON** | **London, England**
May 2021

- › Worked in collaboration with SoundOut! to develop methods to test and validate music pre-testing methods assessing explicit, implicit, and semantic associations with audio assets
- › In process of publishing academics papers detailing theoretical and technical aspects of state-of-art audio branding paradigms
- › In process of developing handbook for testing of audio assets for practitioners

[Audio Branding](#) [Data Science](#) [Online Testing](#) [Melodic Memory](#) [Mixed Effects Models](#) [R](#)

June 2021 | **Senior Research Associate, TROMPA x GOLDSMITHS, UNIVERSITY OF LONDON** | **London, England**
August 2019

- › Ran software user testing for newly developed online musical annotation systems
- › Contributed to writing and presentation of academic research from TROMPA project

[Computational Musicology](#) [Digital Humanities](#) [Music Encoding Initiative](#) [Linked Data](#)

June 2020 | **Lead Instructor, Data Science, FLATIRON SCHOOL x WEWORK** | **London, England**
September 2019

- › Lectured, assessed, and critiqued students daily on basic Python programming, data engineering, and machine learning
- › Designed R and tidyverse training for graduates of data science program
- › Performed duties required as senior managerial role (hiring, administration)
- › Worked with 74 students, currently have placed 15 of graduates in jobs as of today

[Python](#) [Classroom Teaching](#) [Leadership](#) [Data Analysis](#) [Data Engineering](#) [Hypothesis Testing](#)

CONSULTANT EXPERIENCE

Spring 2021 | **Research Lead, MASSIVE MUSIC** | **London, England**
Winter 2020

- › Collaborated with international drug client to develop music used in marketing campaign
- › Designed experimental framework to test efficacy of music designed for pain relief
- › Advised on public engagement with scientific research

[R](#) [Audio Branding](#) [Experimental Design and Analysis](#)

Summer 2019 | **Data Scientist, VERITONIC, INC.** | **New York, New York**

- › Suggested methods to implement statistical significance/effect size testing on platform
- › Worked as contracted Data Scientist to develop tool to classify uniqueness of audio logos
- › Advised on long term data strategy of company
- › Clients of company were then able to asses the degree to which their audio tracks differed from others in corpus

[R](#) [Audio Branding](#) [Audio Analysis](#) [Data Strategy](#)

Spring 2019 | **Software Instructor, MINERVA STATISTICAL CONSULTING** | **London, England**

- › Designed and taught two-day weekend classes on R programming language
- › Topics taught include "Introduction to R" which assumed no programming experience
- › After taking course, students were able to import their own data, plot with **ggplot2**, manipulate data with the **tidyverse**, and run a linear regression model

[R](#) [Course Design](#) [Teaching](#)

- April 2019 | Scientist on “Music for Brainwaves” Project, **SOUNDSCAPE AGENCY** | London, England
 March 2018
- > Collaborated with CitizenM Hotels, Erased Tapes Records, Bose, and Soundscape Agency
 - > Designed research to examine effects of music on concentration, anxiety relief, and relaxation
 - > Collaborated with artists to create musical deliverables that can be now heard on Spotify
 - > Oversaw experimental design using behavioral and physiological experiments
 - > Analyzed and modeled data for all experiments
- Experimental Design | Survey Design | Data Analysis | Data Reporting | jsPsych | Public Engagement
- June 2015 | Project Consultant, **SLICE THE PIE!** | London, England
- > Created Semantic Differential Tool to match brand personality to perceived emotion
 - > Documentation of tool construction published in 2016 Proceedings of International Conference on Music Perception and Cognition, San Francisco
 - > Tool served as prototype for Soundout’s Brand Match Tool
- Music and Emotion | Brand Matching | Perceptual Similarity | Confirmatory Factor Analysis

TECHNOLOGIES

The projects I work on all use contemporary data science or software engineering technology. Here I list technologies or methodologies I use regularly or have published academic papers using these tools

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|--|---|---|---|
| <p>> Software</p> <ul style="list-style-type: none"> - R (base, tidyverse) - Python 3 - Linux (Mint, Ubuntu) - git - bash | <p>> Statistical Models</p> <ul style="list-style-type: none"> - Regression - ANOVA - Multi-level/Mixed Effects (lme4, Rstan) - Experimental Design | <p>> Machine Learning</p> <ul style="list-style-type: none"> - Cross Validation - Non-parametric models (tree based methods, random forest) - Unsupervised Methods (PCA, HCA, K-Means) | <p>> Specializations</p> <ul style="list-style-type: none"> - Musical Feature Based Analysis - Musical Corpus Analysis - Cognitive Ability |
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CONTINUING PROFESSIONAL DEVELOPMENT

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| <p>May 2020
April 2020</p> | <p>Regression Modeling Strategies Short Course
Certified tidyverse Instructor</p> | <p>Vanderbilt University School of Medicine
RStudio</p> |
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EDUCATION

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|-------------------------------|---|---|
| <p>2019
2014
2012</p> | <p>Ph.D. in Music Theory, Minor in Cognitive and Brain Sciences
MSc. in Music, Mind and Brain
B.M. Instrumental Performance</p> | <p>Louisiana State University
Goldsmiths, University of London
Baldwin Wallace University</p> |
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