Robert J Ellis, PhD

Behavioral Researcher and Data Scientist

http://robjellis.net
robjellis@gmail.com
San Francisco

Profile

In hot pursuit of a deepened collective understanding of the intricacies of human attention, motivation, and action. Over 15 years of theoretical and practical training in cognitive psychology, physiology, statistics, neuroscience, and computer science. Obsessed with translating complex data into beautiful visualizations, compelling analyses, and straight-shooting insights. Passionate, proficient, and personable.

Highlights *(detailed descriptions and demonstrations here)*

- ***The LyricFind corpus:*** Led a partnership with LyricFind (a leading distributer of licensed song lyrics) to release an open-access dataset of 276,000 lyrics (68 million words, creating a best-in-class resource for academic research.
- ***Brain image visualization software:*** Authored two open-source toolboxes for a leading software analysis package, enabling exploratory data analyses of 3-D brain images. Over 400 downloads/registrations to date.
- ***iBEATS website:*** Wrote an algorithm to quantify tempo stability in a dataset of one million audio recordings; designed a web interface to facilitate music playlist creation for recreational exercise and physical therapy.
- ***iRACE app:*** Led the development of a mobile app that records and analyses gait patterns in Parkinson's patients. Ran a pilot clinical trial on 24 individuals to validate its accuracy against traditional sensor-based measurement.

Skills

- ***Programming*** • *proficient*: Matlab, Octave; *intermediate*: Python; *basic*: R, PostgreSQL
- ***Analytical*** • *proficient*: General(ized) linear model, nonparametric tests, resampling/permutation methods
- ***Methodological*** • *proficient*: functional MRI, heart rate variability, reaction time; *intermediate*: quantitative UX
- ***Scholarship*** • 25 peer-reviewed journal articles and conference papers, with 10 as first author; h-index = 15

Experience

Behavioral Researcher and Designer — Omada Health, San Francisco • 03.2016–06.2017

- Developed a metric of overall participant program engagement in Omada's digital weight loss program that strongly predicts clinically meaningful weight reductions at 3 years in a longitudinal cohort of 220 participants.
- Conducted a comparative analysis of weight loss in 15,000 Omada participants and 55,000 participants from a national dataset, revealing superior outcomes and engagement for participants in the Omada program.

Research Fellow in Computer Science — National University of Singapore • 02.2013–09.2015

- Served as the key liaison between an international research team based in Boston and Singapore.
- Headed three projects: (1) a mobile app for measuring gait in Parkinson's patients; (2) a website for generating music playlists for exercise/rehabilitation; (3) an open-access corpus of song lyrics for academic research.

Research Fellow in Neurology — Beth Israel Deaconess Medical Center, Boston • 06.2009–01.2013

- Published analyses exploring the impact of musical training on neurological changes in a cross-sectional sample of 84 children and adults, and a longitudinal cohort of 20 children measured over 3–5 years.
- Collaborated with biomedical engineers on a point process algorithm for the analysis of gait event series in sensor-based recordings from 20 individuals, creating a new class of clinically relevant diagnostic metrics.

Education

PhD in Experimental Psychology	The Ohio State University	04.2006–08.2009
MA in Experimental Psychology	The Ohio State University	08.2003–03.2006
BA (Honors) in Psychology	University of Delaware	09.1999–05.2003