

# Patrick Sadil

POSTDOCTORAL RESEARCH FELLOW

Johns Hopkins Bloomberg School of Public Health; Biostatistics

✉ psadil1@jh.edu | 🏠 psadil.github.io/psadil | ☎ 0000-0003-4141-1343 | 📧 psadil | 🌐 psadil

## Education

### PhD, Cognitive Psychology

UNIVERSITY OF MASSACHUSETTS, AMHERST

2019–2020

- Designed hierarchical Bayesian algorithm for analyzing high-dimensional medical imaging data (MRI)
- Implemented algorithm on High Performance Computing cluster
- Tested algorithm in newly collected neuroimaging dataset

### MS, Cognitive Psychology

UNIVERSITY OF MASSACHUSETTS, AMHERST

2015–2019

- Formulated and implemented novel hierarchical Bayesian analysis of behavior
- Published analysis algorithm as journal article (Sadil, Cowell, and Huber 2019)
- Used algorithm to parse experiment (Sadil, Potter, Huber, and Cowell 2019)

### BA, Biology

REED COLLEGE

2010–2014

## Experience

### Postdoctoral Research Fellow - Biostatistics

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

July 2021 - Present

- Built quality control procedure for large neuroimaging dataset of chronic pain
- Arranged analysis pipeline at High Performance Computing center to automate data processing (python, bash, Docker).

### Postdoctoral Research Associate - Cognitive Psychology

UNIVERSITY OF MASSACHUSETTS, AMHERST

Sep 2020 - June 2021

- Implemented user-friendly R package for inferring neuromodulation and bundle as BIDS Application
- Automated testing of package on multiple operating systems (Linux, macOS, Windows) with GitHub Actions
- Designed multi-day workshops on neuromodulation package, including background in Bayesian analyses

### Research Assistant

UNIVERSITY OF MASSACHUSETTS, AMHERST

Summer 2016 - Summer 2020

- Organized tutorials and a weekly 'coding club' focused on software for graduate students
- Conducted research for and published two first-author papers under NSF and NIH funded projects

### Teaching Assistant - Research Methods in Psychology

UNIVERSITY OF MASSACHUSETTS, AMHERST

Spring 2016

- Lectured to 20 psychology undergraduate students twice weekly, guiding students through three research projects
- Reviewed theory of introductory statistics, including lab-based practice
- Maintained office hours to review course content and exams one-on-one

## Personal Projects

### \$50000 GRANT FROM ORACLE - PROBING BIAS IN AUTOMATED DIAGNOSES FROM MEDICAL IMAGING

- Ongoing project to study biases in predictions of health outcomes with the largest neuroimaging dataset ever collected
- Train machine and deep learning algorithms on one demographic, assess generalizability in others
- Running python scripts on Oracle Cloud Infrastructure

### MACHINE LEARNING WITH GENERATIVE ADVERSARIAL NETWORK

- Scrapped 25,000 images from Google Maps using Google APIs and python
- Preprocessed images in python for training TensorFlow neural network (stylegan2-ada)
- Trained network on Google Cloud Compute Engine

### ONLINE BEHAVIORAL EXPERIMENT

- Prepared for COVID-19 by porting behavioral experiment to Heroku using python web framework (Django), Angular, and postgresSQL