Matthew Brett

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RECENT WORK

Turing Fellow *August 2018–present*
Fellow of the Alan Turing Institute

University of Birmingham *2017–present*
Lecturer in data science

University of California, Berkeley *2008–2017*
Associate researcher, Brain Imaging Center

MRC Cognition and Brain Sciences Unit, Cambridge *2005–2008*
Senior investigator scientist

University of California, Berkeley *2003–2005*
Associate specialist in psychology

MRC Cognition and Brain Sciences Unit, Cambridge *1999–2003*
Research associate in psychology

MRC Cyclotron Unit, Hammersmith Hospital / Physiology Laboratory, Oxford *1996–1999*
Research registrar in neurology

EDUCATION AND QUALIFICATIONS

Membership of the Royal College of Physicians *1994*

Royal London Hospital *1987–1990*
Bachelor of medicine and surgery

Cambridge University *1984–1987*
BA Experimental psychology

RESEARCH METRICS

Citations: 16770
h-index: 35
i10-index: 45

SELECTED TEACHING

Computing for data *2019-20*
Two terms at University of Birmingham ; masters and neuroscience undergraduates; Python course based on Berkeley's *Foundations of Data Science*; all class materials published with open licence at https://github.io/matthew-brett/cfd2019.

Functional MRI methods *2016*
University of California, BerkeleyNeuroscience graduate students, teaching reproducible analysis of functional MRI analysis through coding in Python, Git version control and Github working process. Emphasis on Nibabel, Numpy, Scipy, Matplotlib. All materials online with open license at https://bic-berkeley.github.io/psych-214-fall-2016/topics.html.

Reproducible and collaborative statistical data science *2015*
University of California, Berkeley; undergraduates and masters students; statistics / neuroimaging course taught with Python, Git and Github; emphasis on Numpy, Scipy, Matplotlib and Nibabel. Co-taught with Jarrod Millman for the statistics department. We describe and assess the course in Millman et al., 2018.

SELECTED SCIENTIFIC COMPUTING

Scientific Python: developer *2004–present*
Contributor to all main scientific Python packages, including `numpy`, `scipy`, `matplotlib`, `Cython`, `statsmodels`; organization member of projects `numpy`, `scipy`, `matplotlib`, `scikit-image`, `Python-pillow`, `MacPython` and the Python packaging authority.

Neuroimaging in Python project *2004–present*
Co-founder (with Jarrod Millman) of the neuroimaging in Python project (NIPY) http://nipy.org. Nipy is now home to 12 neuroimaging code projects

`nibabel`**: lead author** *2008–present*
A foundation library for neuroimaging data formats

`NiPy`**: lead author and maintainer** *2008–present*
Project implementing spatial processing and statistics for functional MRI data.

`DiPy`**: developer** *2009–present*
Fourth contributor by commits. `dipy` is a Python library for analysis of diffusion imaging data.

`MarsBaR`**: lead author and maintainer** *2003–present*
Widely used region of interest analysis toolbox for functional imaging data in Matlab. MarsBaR abstract cited 2796 times as of August 2020.

SELECTED PUBLICATIONS

Virtanen, P., Gommers, R., Oliphant, T. E., Haberland, M., Reddy, T., Cournapeau, D., Burovski, E., Peterson, P., Weckesser, W., Bright, J., van der Walt, S. J., Brett, M., Wilson, J., Millman, K. J., et al. (2020). SciPy 1.0: fundamental algorithms for scientific computing in Python. *Nature methods*, *17*(3), 261–272.

Millman, K. J., Brett, M., Barnowski, R., & Poline, J.-B. (2018). Teaching computational reproducibility for neuroimaging. *Frontiers in Neuroscience*, *12*arXiv:1806.06145, 727. https://doi.org/10.3389/fnins.2018.00727

Garyfallidis, E., Brett, M., Amirbekian, B., Rokem, A., van der Walt, S., Descoteaux, M., & Nimmo-Smith, I. (2014). Dipy, a library for the analysis of diffusion mri data. *Frontiers in Neuroinformatics*, *8*(8). https://doi.org/10.3389/fninf.2014.00008

Poline, J.-B., & Brett, M. (2012). The general linear model and fMRI: Does love last forever? *NeuroImage*, *62*(2), 871–880. https://doi.org/10.1016/j.neuroimage.2012.01.133

Poldrack, R. A., Fletcher, P. C., Henson, R. N., Worsley, K. J., Brett, M., & Nichols, T. E. (2008). Guidelines for reporting an fMRI study. *Neuroimage*, *40*(2), 409–414. https://doi.org/10.1016/j.neuroimage.2007.11.048

Brett, M., Penny, W., & Kiebel, S. (2007). Parametric procedures. In K. Friston, J. Ashburner, S. Kiebel, T. Nichols, & W. Penny (Eds.), *Statistical Parametric Mapping: The Analysis of Functional Brain Images* (pp. 223–231). Elsevier.

Millman, K. J., & Brett, M. (2007). Analysis of functional magnetic resonance imaging in Python. *Computing in Science & Engineering*, 52–55.

Saxe, R., Brett, M., & Kanwisher, N. (2006). Divide and conquer: A defense of functional localizers. *Neuroimage*, *30*(4), 1088–96, discussion 1097–9. https://doi.org/10.1016/j.neuroimage.2005.12.062

Nichols, T., Brett, M., Andersson, J., Wager, T., & Poline, J.-B. (2005). Valid conjunction inference with the minimum statistic. *Neuroimage*, *25*(3), 653–660. https://doi.org/10.1016/j.neuroimage.2004.12.005

Brett, M., Johnsrude, I. S., & Owen, A. M. (2002). The problem of functional localization in the human brain. *Nat Rev Neurosci*, *3*(3), 243–249. https://doi.org/10.1038/nrn756