

Matthew Brett

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RECENT WORK

Alan Turing Institute Fellow	August 2018–present
University of Birmingham, UK Lecturer in data science	2017–present
University of California, Berkeley Associate researcher, Brain Imaging Center	2008–2017
MRC Cognition and Brain Sciences Unit, Cambridge, UK Senior investigator scientist	2005–2008
University of California, Berkeley Associate specialist in psychology	2003–2005
MRC Cognition and Brain Sciences Unit, Cambridge, UK Research associate in psychology	1999–2003
MRC Cyclotron Unit, Hammersmith Hospital / Physiology Laboratory, Oxford Research registrar in neurology	1996–1999

EDUCATION AND QUALIFICATIONS

Membership of the Royal College of Physicians	1994
Royal London Hospital Bachelor of medicine and surgery	1987–1990
Cambridge University BA Experimental psychology	1984–1987

RESEARCH METRICS

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

SELECTED TEACHING

Computing for data Two terms at University of Birmingham, UK; masters and neuroscience undergraduates; Python course based on Berkeley's <i>Foundations of Data Science</i> ; all class materials published with open licence at https://github.io/matthew-brett/cfd2019 .	2019-20
Functional MRI methods University of California, Berkeley Neuroscience 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 .	2016
Reproducible and collaborative statistical data science 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.	2015

SELECTED SCIENTIFIC COMPUTING

Scientific Python: developer

2004–present

Core contributor to Scipy; 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) <https://nipy.org>. Nipy is now home to 12 neuroimaging code projects.

nibabel: lead author

2008–present

A foundation library for neuroimaging data formats; 1794 commits.

NiPy: lead author and maintainer

2008–present

Project implementing spatial processing and statistics for functional MRI data; 1657 commits.

DiPy: developer

2009–present

dipy is a Python library for analysis of diffusion imaging data; 564 commits.

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. 713 commits.

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*, 12arXiv: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>