

2. Study inception and planning

2.1. Study Preparation and Piloting

| | | | | |
|------------------------|---|--|---------|---|
| protocols.io | https://www.protocols.io | Platform for sharing protocols | General | |
| Protocol exchange | https://protocolexchange.researchsquare.com | Repository for sharing protocols sponsored by Nature Portfolio | General | |
| Nature protocols | https://www.nature.com/nprot | Journal to publish secondary research articles - predominantly Protocols | General | |
| Example SOP for MRI | https://osf.io/6r9f8 | Example SOP for MRI | MRI | |
| Example SOP for EEG | https://protocolexchange.researchsquare.com/article/pe | Farrens et al. EEG Recording Protocol for Cognitive and Affective Human Neuroscience Research | EEG | 10.21203/rs.2.18328/v2 |
| SOP of the HCP for MRI | https://www.humanconnectome.org/storage/app/media/ | Example SOP of the HumanConnectomeProject for MRI | MRI | |
| SOP of the HCP for MEG | https://www.humanconnectome.org/storage/app/media/ | Example SOP of the HumanConnectomeProject for MEG | MEG | |
| BrainVerse | https://github.com/repronim/brainverse | Desktop application for reproducible practices (electronic lab notebook, semantic annotation, etc) | | |
| Hitchhackers | https://learn-neuroimaging.github.io/hitchhackers_guide | Guide with links and resources for neuro-needs | General | |
| BrainPower | https://brainpower.readthedocs.io/en/latest | Power analysis in neuroimaging | General | |

2.2. Pre-registration

| | | | | |
|--|---|---|---------|---|
| OSF preregistration | https://osf.io/registries | OSF preregistration platform including templates and forms for different types of preregistration | General | |
| Aspredicted.org | https://aspredicted.org/ | A simplified form for pre-registration | General | |
| Clinicaltrials.gov | https://clinicaltrials.gov/ | Pre-registration of clinical trials (NIH requires a pre-registration for clinical trials) | General | |
| Center for Open Science (Preregistration) | https://www.cos.io/initiatives/prereg | General information about pre-registration | General | |
| Center for Open Science (Registered Reports) | https://www.cos.io/initiatives/registered-reports | General information about registered reports | General | |
| Tips for pre-registrations (from OHBM) | https://www.ohbmbrianmappingblog.com/blog/pre-regis | A blog post sponsored by OHBM with tips for pre-registration | General | |
| fMRI-prereg | https://github.com/jessicafflannery/fmri-prereg | Pre-registration template for fMRI studies. Extended OSF template. | fMRI | |
| EEG ERP Preregistration Template | https://osf.io/preprints/metaarxiv/4nvt/ | EEG ERP Preregistration Template | EEG | 10.31222/osf.io/4nvt |
| List of pre-registration examples | https://docs.google.com/spreadsheets/d/1_R3UBKvT4 | List of neuroimaging and electrophysiology pre-registrations | General | |
| Examples of preregistered M/EEG studies | http://mneimai.org/eeq-meg-preregistration/ | EEG/MEG articles with (some form of) preregistration by Natalie Schaworonkoff | M/EEG | |

[See Reporting section in 6.4. Publication of scientific results]

2.3. Ethical review and data sharing plan

| | | | | |
|---------------------------------|---|--|---------|---|
| Open Brain Consent | https://open-brain-consent.readthedocs.io/ | Examples to prepare consent forms including a EU GDPR-compliant template (multiple languages) | General | 10.5281/zenodo.4264941 |
| TTW: Guide for Ethical Research | https://the-turing-way.netlify.app/ethical-research | The Turing Way - Guide for Ethical Research covers topics related to ethical aspects in data science | General | 10.5281/zenodo.3233986 |

2.4. Looking at the data early and after: Monitoring quality

| | | | | |
|-------------|---|---|-----|---|
| MRIQC | https://mriqc.readthedocs.io/en/latest/ | Data quality control software for MRI | MRI | 10.1371/journal.pone.0184661 |
| qaala-T | https://qaala-t.shinyapps.io/qaala-t_app/ | Quality control of FreeSurfer segmented MRI data | MRI | 10.5281/zenodo.4575464 |
| visual QC | https://raamana.github.io/visualqc/readme.html | Assistive tool to improve the quality control workflow of MRI/fMRI/dMRI data | MRI | 10.5281/zenodo.3266381 |
| MRI QC Book | https://www.nipreps.org/qc-book/welcome.html | Hands-on quality control of human and preclinical MRI data: from acquisition to post processing | MRI | |

3. Data acquisition

3.1. Brain data acquisition and reconstruction

| | | | | |
|-----------------------|---|---|-----|---|
| Open Source Imaging | https://www.opensourceimaging.org | Open source soft- and hardware reserach and development projects around MRI | MRI | |
| MRhub | https://ismrm.github.io/mrhub/ | Index of open-source tools developed by the ISMRM community | MRI | |
| qmLab | http://qmrlab.org/ | MATLAB/Octave open-source software for quantitative MR image analysis | MRI | 10.21105/joss.02343 |
| Pulseq | https://pulseq.github.io/ | Open source framework for the development and execution of MR pulse sequences | MRI | |
| PyPulseq | https://github.com/imr-framework/pypulseq | Python package for MRI pulse sequence design | MRI | 10.21105/joss.01725 |
| GammaStar | https://gamma-star.mevis.fraunhofer.de/#/ | Portable and platform-independent MR pulse sequence programming framework | MRI | 10.1002/mrm.28020 |
| TOPPE | https://www.opensourceimaging.org/project/toppe-rapid | Modular framework for rapid prototyping of pulse sequences on General Electric MRI scanners | MRI | |
| ODIN | http://od1n.sourceforge.net/ | C++ software framework to develop and simulate magnetic resonance sequences | MRI | 10.1016/j.jmr.2004.05.021 |
| SequenceTree | https://github.com/magland/sequencetree4 | Pulse sequence programming in a dynamic visual environment | MRI | |
| ISMIR Raw data format | https://ismmrd.github.io/apidocs/1.4.2/ | Standard for MRI raw datasets | MRI | 10.1002/mrm.26089 |
| Gadgetron | http://gadgetron.github.io/ | Open source framework for medical image reconstruction | MRI | 10.1002/mrm.24389 - 10.1002/mrm.25213 |
| BART | https://mrirecon.github.io/bart/ | Open source image-reconstruction framework for computational MRI | MRI | 10.5281/zenodo.4570601 |

| | | | | |
|----------------------------------|--|---|-----|---|
| MRIReco.jl | https://github.com/MagneticResonanceImaging/MRIReco | MRI reconstruction framework | MRI | 10.48550/arXiv.2101.12624 |
| Vendor-neutral sequences (VENUS) | https://github.com/qmrlab/venus | Open-source pulse sequences integrated with qMRLab for reproducible quantitative imaging | MRI | |
| SigPy | https://sigpy.readthedocs.io/en/latest/ | Package for signal processing, iterative methods, MRI reconstruction and MRI pulse design | MRI | 10.5281/zenodo.5893788 |
| MRM Highlights | https://blog.ismrm.org/category/highlights/ | An MRI science communication platform endorsed by Magnetic Resonance in Medicine | MRI | |
| MNE-Python Maxwell filter | https://mne.tools/dev/generated/mne.preprocessing.ma | MNE-Python Maxwell filter implementation (equivalent to Elekta's proprietary Maxfilter) | MEG | |
| OpenBCI | https://openbci.com | Initiative for open EEG hardware and tools for biosensing | EEG | |

3.2. Stimulus presentation and behaviour

| | | | | |
|--------------|---|--|---------|---|
| Psychopy | https://www.psychopy.org/ | Python-based toolbox for stimulus presentation | General | 10.3758/s13428-018-01193-y |
| Psychtoolbox | http://psychtoolbox.org/ | MATLAB/Octave based toolbox for stimulus presentation | General | |
| Pavlovía | https://pavlovía.org | Already implemented task protocols | General | |
| ReproStim | https://github.com/ReproNim/reprostim | Video capture and recording suite for neuroimaging and psychology experiments | General | |
| ERP CORE | https://erpinfo.org/erp-core | Optimized paradigms for ERP components including scripts and data processing pipelines | EEG | 10.18115/D5JW4R |

4. Research Data Management

4.1. Data standard: BIDS

| | | | | |
|--|---|---|------------|---|
| BIDS | www.bids-standard.org | Community-driven standard for organizing, describing and sharing neuroimaging data | General | |
| BIDS specification | https://bids-specification.readthedocs.io/en/stable/ | Specification with details for different neuroimaging modalities | General | |
| BIDS validator | https://bids-standard.github.io/bids-validator/ | Validator to easily check whether a dataset meets the standard | General | |
| BIDS starter kit | https://bids-standard.github.io/bids-starter-kit/ | Simplifies the learning process for newcomers | General | |
| BIDS examples | https://github.com/bids-standard/bids-examples | Example files following BIDS organization | General | |
| BIDS converters | | | | |
| BIDS available converters | https://bids.neuroimaging.io/benefits.html#converters | BIDS available converters for different modalities | General | |
| HeuDiConv | https://github.com/nipy/heudiconv | BIDS converter for MRI data | MRI | 10.5281/zenodo.6544633 |
| dcm2bids | https://github.com/UNFMontreal/Dcm2Bids | BIDS converter for MRI data | MRI | 10.5281/zenodo.6658099 |
| Data2Bids | https://github.com/SIMEXP/Data2Bids | BIDS converter for MRI data | MRI | |
| ReproIn | https://zenodo.org/record/3625000#.Yk8fS27MjJQ | Generation of version-controlled BIDS datasets from MR scanners, using HeuDiConv and DataLad | MRI | 10.5281/zenodo.3625000 |
| PET2BIDS | https://github.com/openneuroPET/PET2BIDS | BIDS converter for PET data | PET | |
| MNE-BIDS | https://mne.tools/mne-bids/stable/index.html | BIDS converter for MEEG data as part of the MNE-Python software | M/EEG,iEEG | 10.5281/zenodo.6359371 |
| Fieldtrip data2bids | https://www.fieldtriptoolbox.org/reference/data2bids/ | BIDS converter for MEEG data as part of the FieldTrip toolbox | M/EEG | |
| Brainstorm BIDS tools | https://neuroimage.usc.edu/brainstorm/ExportBids | BIDS converter for MEEG data as part of the Brainstorm toolbox | M/EEG | |
| EEGLAB bids-matlab-tools | https://github.com/scn/bids-matlab-tools | BIDS converter for EEG data as part of the EEGLAB toolbox | EEG | |
| Interaction with BIDS datasets | | | | |
| pyBIDS | https://github.com/bids-standard/pybids | Python library centralizing interactions with datasets conforming BIDS | General | 10.5281/zenodo.6412479 |
| BIDS-Matlab | https://github.com/bids-standard/bids-matlab/ | Matlab library centralizing interactions with datasets conforming BIDS | General | 10.5281/zenodo.5910585 |
| rbids | https://rdr.io/github/mathesong/rbids/ | R Package To Access BIDS Datasets | General | |
| ancpBIDS | https://github.com/ANCP/labOldenburg/ancp-bids | Lightweight python library with schema support centralizing interactions with datasets conforming BIDS. | General | |
| BIDS apps | https://bids-apps.neuroimaging.io/ | Container images capturing neuroimaging pipelines for BIDS formatted datasets | General | |
| Interaction with the BIDS community | | | | |
| BIDS email discussion list | https://groups.google.com/g/bids-discussion | Email list for discussion of issues and BIDS extensions | General | |
| Neurostars: BIDS tag | https://neurostars.org/ | Question&Answer forum for neuroscience researchers, infrastructure providers and software developers | General | |
| Brainhack Mattermost: BIDS channel | https://mattermost.brainhack.org/ | Communication channel part of the Brainhack project | General | |

4.2. Metadata and data annotation

| | | | | |
|---|---|---|---------|---|
| Hierarchical Event Descriptor (HED) | https://www.hedtags.org/ | Framework for systematically describing events using a controlled but extensible vocabulary | General | |
| InterLex | https://neuinfo.org/interlex/dashboard | Project to define mapping between different data terminologies | General | |
| The Cognitive Atlas | http://www.cognitiveatlas.org | Knowledge base (or ontology) that characterizes the state of current thought in cognitive science | General | 10.3389/fninf.2011.00017 |
| The Cognitive Paradigm Ontology (CogPO) | http://www.cogpo.org/ | Linked ontology about the structure and function of the brain | General | |
| PROV vocabulary | https://www.w3.org/ns/prov | Enable the interoperable interchange of provenance information in heterogeneous environments | General | |
| The Neuroimaging Data Modeling (NIDM) | http://nidm.nidash.org/ | Collection of specifications for experiment description and results of neuroimaging analysis | MRI | |
| NIDM-Terms | https://nidm-terms.github.io/ | Collection of community-developed controlled vocabularies of publicly-available neuroimaging data | MRI | |

| | | | |
|--------|---|---------------------------------------|-----|
| PyNIDM | https://github.com/incf-nidash/PyNIDM | Python library to manipulate the NIDM | MRI |
|--------|---|---------------------------------------|-----|

4.3. Data management and tracking

| | | | |
|------------------|---|--|---|
| DMP Online | https://dmponline.dcc.ac.uk/ | A resource to create, review, and share Data Management Plans. | General |
| DataLad | datalad.org | Managing and version controlling digital files | General 10.5281/zenodo.6845396 |
| DataLad Handbook | http://handbook.datalad.org/en/latest/ | description why and how to use DataLad | General 10.5281/zenodo.6463273 |
| Brainlife | https://brainlife.io | Free cloud platform for secure neuroscience data analysis | General |
| XNAT | https://www.xnat.org | Platform for management, productivity and quality assurance of imaging and associated data | MRI |

5. Data processing and analysis

5.1. Software as a research instrument

| | | | |
|--|---|---|---|
| General | | | |
| Nibabel | https://nipy.org/nibabel/ | Read/write access to some common neuroimaging file formats (NiPy) | General |
| NiPype | https://nipy.readthedocs.io/en/latest/ | Interface to facilitate interaction between neuroimaging sw packages within a single workflow (NiPy) | General 10.5281/zenodo.6658382 |
| The Good Research Code Handbook | https://goodresearch.dev/ | The Good Research Code Handbook by Patrick Mineaul | General 10.5281/zenodo.6834519 |
| Neuroimaging and data science Book | http://neuroimaging-data-science.org | Jupyter book for a practical introduction to neuroimaging and data science by Ariel Rokem & Tal Yarkoni | General 10.5281/zenodo.5796873 |
| Python for the practicing neuroscientist [See 6.2. Methodological transparency] | https://elifesciences.org/labs/779833b | Python for the practicing neuroscientist: an online educational resource | EEG |
| Neuroimaging MRI | | | |
| AFNI | https://afni.nimh.nih.gov/ | Software for analysis and display of multiple MRI modalities (C, Python, R) | MRI 10.1006/cbmr.1996.0014 |
| ANTs | http://stnava.github.io/ANTs/ | Advanced Normalization Tools for MRI analysis | MRI |
| Freesurfer | https://surfer.nmr.mgh.harvard.edu/ | Software suite for processing and analyzing (human) brain MRI images | MRI |
| FSL | https://fsl.fmrib.ox.ac.uk/fsl/fslwiki/FSL | Library of analysis tools for FMRI, MRI and DTI brain imaging data (only free for academic use) | MRI |
| SPM | https://www.fil.ion.ucl.ac.uk/spm/ | Designed for the analysis of brain imaging data sequences (Matlab) | MRI,PET,M/EEG |
| Neuroimaging MEG & EEG | | | |
| Brainstorm | https://neuroimage.usc.edu/brainstorm/Introduction | Analysis of brain recordings and multiunit electrophysiology (Matlab) | M/EEG,iEEG,iNIRS |
| EEGLAB | https://sccn.ucsd.edu/eeglab/index.php | Processing continuous and event-related EEG, MEG and other electrophysiological data (Matlab) | EEG |
| Fieldtrip | https://www.fieldtriptoolbox.org/ | Toolbox for MEG, EEG and iEEG analysis (Matlab) | M/EEG,iEEG,iNIRS 10.1155/2011/156869 |
| MNE-Python | https://mne.tools/stable/index.html | Exploring, visualizing, and analyzing human neurophysiological data (Python) | M/EEG,iEEG,iNIRS 10.5281/zenodo.7019768 |
| Neuroimaging PET | | | |
| PETSurfer | https://surfer.nmr.mgh.harvard.edu/fswiki/PetSurfer | Part of FreeSurfer, Coregistration with MRI, partial volume correction and kinetic modelling (RTM only) | PET |
| Kinfitr | https://github.com/mathesong/kinfitr | PET Kinetic Modelling using R, kinfitr is a package for PET Kinetic Modelling Using R | PET 10.1101/755751 |
| PETPVE12 | https://github.com/GGonEsc/petpve12 | An SPM toolbox for Partial Volume Effects correction of PET images | PET 10.1016/j.neuroimage.2016.12.077 |

5.2. Standardized preprocessing and workflows

| | | | |
|-------------------|---|--|---|
| NIPreps | https://github.com/nipreps | Summary of neuroimaging preprocessing tools | MRI |
| fMRIPrep | https://fmriprep.org/en/stable/ | Robust preprocessing pipeline for fMRI data | MRI 10.1038/s41592-018-0235-4 |
| HCP Pipelines | https://github.com/Washington-University/HCPpipelines | Set of tools for processing MRI images for the HCP | MRI |
| C-PAC | https://fcp-indi.github.io/ | Preprocessing and analysis pipeline for resting state fMRI | MRI |
| QSIprep | https://qsiprep.readthedocs.io/en/latest/ | Preprocessing and analysis of q-space images | MRI |
| Connectome Mapper | https://connectome-mapper-3.readthedocs.io/en/latest/ | Full anatomical, diffusion and resting-state MRI processing pipeline for connection matrices | MRI 10.5281/zenodo.6645256 |
| TractoFlow | https://tractoflow-documentation.readthedocs.io/en/latest/ | Pipeline for diffusion MRI datasets from the raw data to the tractography | MRI 10.1016/j.neuroimage.2020.116889 |
| NIAC | https://niak.simexp-lab.org/build/html/index.html | Neuroimaging Analysis Kit: pipelines for preprocessing and mining connectomes | MRI |
| Neurosynth | https://neurosynth.org/ | Platform for large-scale, automated synthesis of fMRI data | MRI |
| BrainMap | http://www.brainmap.org/ | Database of published neuroimaging experiments with coordinate-based results in Talairach or MNI space | MRI |
| NIMARE | https://nimare.readthedocs.io/en/latest/ | Neuroimaging Meta-Analysis Research Environment | MRI 10.5281/zenodo.6642243 |
| neuroquery | https://neuroquery.org | Generate brain maps by querying the neuroscience literature | MRI 10.7554/eLife.53385 |
| qMRFlow | https://github.com/qMRLab/qMRFlow | Pipelines for end-to-end quantitative MRI processing | MRI |
| Appian | https://github.com/APPIAN-PET/APPIAN | PET pipeline: coregistration, partial-volume correction, quantification with tracer kinetic modeling | PET 10.3389/fninf.2018.00064 |
| MNE-BIDS Pipeline | https://mne.tools/mne-bids-pipeline/ | Full processing pipeline for BIDS formatted MEG and EEG data | M/EEG |

Containers

| | | | | |
|-----------------------|---|--|---------|---|
| Docker | https://www.docker.com/ | To package specific versions of heterogeneous dependencies and ensure cross-platform compatibility | General | |
| Apptainer/Singularity | https://apptainer.org/ | To package specific versions of heterogeneous dependencies and ensure cross-platform compatibility | General | |
| NeuroDocker | https://github.com/ReproNim/neurodocker | Command-line program to generate neuroimaging Docker/Singularity files and minify containers | General | 10.5281/zenodo.3753248 |
| ReproMan | https://github.com/repronim/reproman | Simplify the creation and management of computing environments in Neuroimaging | General | |

5.3. Statistical modeling and advanced analysis

| | | | | |
|--------------|---|---|---------|---|
| scikit-learn | https://scikit-learn.org/stable/ | Machine learning analyses in Python | General | |
| Nilearn | https://nilearn.github.io/ | Open source python library for advanced analyses of fMRI data | MRI | 10.3389/fninf.2014.00014 |
| PyMVPA | http://www.pympva.org/ | Python package intended to ease statistical learning analyses of large datasets | MRI | 10.1007/s12021-008-9041-y |
| Neuroscout | https://neuroscout.org/ | Platform for fast and flexible re-analysis of (naturalistic) fMRI studies | MRI | |
| FitLins | https://fitlins.readthedocs.io/en/latest/model.html | Reference workflow that fits BIDS-SM using AFNI or Nilearn | MRI | 10.5281/zenodo.6397685 |
| BIDS-SM | https://docs.google.com/document/d/1bq5eNDHTb6NK | BIDS stats model standard, implementation-independent representation of fMRI GLM models | MRI | |

5.4. Multiverse analysis

| | | | | |
|--|---|---|---------|---|
| Explorable Multiverse Analyses | https://explorablemultiverse.github.io/ | Tool to compare alternative analysis options for a given study | General | 10.1145/3290605.3300295 |
| Fuzzy | https://github.com/gklar/fuzzy | Introduces perturbations and keeps track of their influence | General | 10.5281/zenodo.6856971 |
| boba | https://github.com/uwdata/boba | Author and visualize multiverse analyses | General | 10.48550/arXiv.2007.05551 |
| Neuroimaging Analysis Replication & Prediction Study (NARPS) | https://www.narps.info/ | Same fMRI dataset independently analyzed by 70 teams | MRI | 10.1038/s41586-020-2314-9 |
| EEGManyPipelines | https://eegmanypipelines.org/ | Same EEG dataset is being analyzed independently by many teams | EEG | |
| Data driven auditory encoding | https://datadrivenauditoryencoding.herokuapp.com/ | Example to demonstrate the influence of parameter choice on results in Boos et al. 2021 | MRI | |

6. Research dissemination

| | | | | |
|-------------------------------------|---|---|---------|---|
| FAIR Principles | https://www.go-fair.org/fair-principles/ | Findability, Accessibility, Interoperability, and Reusability | General | 10.1038/sdata.2016.18 |
| The Turing Way Community | https://the-turing-way.netlify.app | Open source community-driven guide to reproducible, ethical, inclusive and collaborative data science | General | 10.5281/zenodo.6533831 |
| Research Resource Identifier (RRID) | https://scicrunch.org/resources | To promote research resource identification, discovery, and reuse | General | |
| Licensing | | | | |
| How to choose a license | https://choosealicense.com/ | Step by step guide to choose an appropriate license | General | |
| Comparison of licences | https://en.wikipedia.org/wiki/Comparison_of_free_and_open_source_software_licences | Wikipedia Comparison of free and open-source software licences | General | |
| TTW chapter on Licensing | https://the-turing-way.netlify.app/reproducible-research/ | Provides criteria for selection of a license | General | |
| Example: NiPreps Licensing | https://www.nipreps.org/community/licensing/ | NiPreps software license: Apache License, Version 2.0 | General | |

6.1. Data sharing

Platforms: neuro-oriented

| | | | | |
|---|---|---|---------|--|
| OpenNeuro | openneuro.org | Platform for openly share BIDS formatted neuroimaging data | General | |
| GIN | https://gin.g-node.org | Data management system for comprehensive and reproducible neuroscientific data | General | |
| Brainlife | https://brainlife.io | Cloud platform for secure neuroscience data analysis | General | |
| Ebrains | https://ebrains.eu/ | Digital research infrastructure by the EU Human Brain Project, for data and tools in brain research | General | |
| Ebrains data and knowledge sharing | https://ebrains.eu/services/#category0 | Supports GDPR compatible data sharing | General | |
| Canadian Open Neuroscience Platform (CONP) | http://conp.ca | Infrastructure for open-science workflows and sharing neuroscience data | General | |
| Distributed Archives Neurophy Data Integration (DANDI) | www.dandiarhive.org | The BRAIN Initiative archive for publishing and sharing neurophysiology data | General | |
| International Neuroimaging Data-Sharing Initiative (INDI) | http://fcon_1000.projects.nitrc.org/ | Contains multiple neuroimaging datasets including human and non-human primate neuroimaging data | General | |
| Neuroimaging Tools & Resources Collaboratory (NITRC) | https://www.nitrc.org/ | Neuroimaging tools and resources and data repository | General | |
| National Institute of Mental Health Data Archive (NDA) | https://nda.nih.gov/ | Infrastructure for sharing research data, tools, methods, and analyses | General | |

Platforms: generic

| | | | | |
|----------|---|--|---------|--|
| OSF | https://osf.io/ | For small datasets, study-related files, supplemental information for manuscripts | General | |
| zenodo | https://zenodo.org/ | Repository for research papers, datasets, research software, reports, and other research outputs | General | |
| figshare | https://figshare.com/ | Share files with any format | General | |

Large scale neuroimaging repositories

| | | | | |
|---|---|--|---------|--|
| UK Biobank | https://www.ukbiobank.ac.uk/ | Biomedical database covering genetic and health data of half a million UK citizens | General | |
| Human Connectome Project (HCP) | https://www.humanconnectome.org/ | Datasets of the Human Connectome Project | MRI | |
| Adolescent Brain Cognitive Development (ABCD) | https://abcdstudy.org/ | Data from a long-term study of brain development and child health | MRI | |

| | | | | |
|---|---|---|---------|---|
| StudyForrest | https://www.studyforrest.org | Database for fMRI scans, exetracking data and annotations of the movie Forrest Gump | MRI | |
| The Open MEG Archive (OMEGA) | https://www.mcgill.ca/bic/neuroinformatics/omega | First open data repository fully dedicated to MEG | MEG | |
| Cambridge Centre for Ageing&Neuroscience (Cam-CAN) | https://www.cam-can.org/ | Epidemiological, cognitive, and neuroimaging data to to study ageing | MRI,MEG | |
| List of open datasets in ephys | https://github.com/openlists/ElectrophysiologyData | List of openly available electrophysiological data (EEG, MEG, ECoG/iEEG, and LFP) by Tom Donoghue | M/EEG | |
| 6.2. Methodological transparency | | | | |
| GIT | https://git-scm.com/about | Version control system | General | |
| GitHub | https://github.com/ | Development platform for code sharing | General | |
| GitLab | https://gitlab.com | DevOps platform | General | |
| Bitbucket | https://bitbucket.org/product/ | Allows planning of projects, collaboration on code | General | |
| jupyter notebooks | https://jupyter.org/ | Web application for creating and sharing computational documents | General | |
| Binder | https://binder.readthedocs.io/en/latest/ | Web application for managing digital repositories | General | |
| Google Colab | https://colab.research.google.com/ | Jupyter notebook service on the cloud that requires no setup to use | General | |
| DeepNote | https://docs.deepnote.com | Real-time browser application to collaborate and share projects and jupyter notebooks | General | |
| Software Heritage | https://www.softwareheritage.org/ | Collection, preservation, and sharing of all software that is publicly available in source code form | General | |
| <i>[See 5.1. Software as a research instrument]</i> | | | | |
| 6.3. Derived data sharing | | | | |
| TemplateFlow | https://www.templateflow.org/ | Repository of neuroimaging templates accesible for humans and machines | MRI | 10.1101/2021.02.10.430678 |
| Neurovault | https://neurovault.org/ | Public repository of unthresholded statistical maps, parcellations and atlases of the brain | MRI,PET | 10.3389/fninf.2015.00008 |
| <i>[See 6.1. Data sharing]</i> | | | | |
| 6.4. Publication of scientific results | | | | |
| Reporting | | | | |
| COBIDAS MRI | http://www.humanbrainmapping.org/files/2016/COBIDA | Best practices in data analysis and sharing | MRI | 10.1101/054262 |
| COBIDAS MEEG | https://cobidasmeeg.wordpress.com/ | Best practices in data analysis and sharing | M/EEG | 10.31219/osf.io/a8d8x |
| eCOBIDAS | https://github.com/ohbm/cobidas | A checklist for methods and results reporting for neuroimaging studies | General | |
| Prototype checklist app for PET | https://remi-gau.github.io/cobidas-PET/#/ | Checklist for methods and results reporting for PET studies | PET | |
| ARTEM-IS | https://osf.io/pvrn6/ | Agreed Reporting Template for EEG Methodology - International Standard | EEG | 10.17605/osf.io/pvrn6/ |
| Publication | | | | |
| bioRxiv | https://www.biorxiv.org/ | Preprint server for biology | General | |
| medRxiv | https://www.medrxiv.org/ | Preprint server for health sciences | General | |
| PsyArXiv | https://psyarxiv.com/ | Preprint server for psychological sciences | General | |
| OSF preprints | https://osf.io/preprints | Platform for preprints publication | General | |
| zenodo | https://zenodo.org/ | General purpose repository for research related digital artifacts | General | |
| Zotero | https://www.zotero.org/ | Open reference manager to collect, organize, cite and share research | General | |
| Jupyter Books | https://jupyterbook.org | Open project for building publication-quality books and documents from computational material | | 10.5281/zenodo.4539666 |
| Open Research Europe | https://open-research-europe.ec.europa.eu/ | Publication and open peer review for research stemming from Horizon 2020/Europe funding | General | |
| Neurolibre | https://neurolibre.org/ | Repository of interactive neuroscience notebooks | General | |
| CodeOcean | https://codeocean.com | Computational workbench that allows code publication and data upload in capsules. | General | |
| Aperture | https://www.humanbrainmapping.org/i4a/pages/index.c | Interactive publication tool | General | |
| F1000Research | https://f1000research.com/ | Open research publishing platform with transparent peer review and source data openly available | General | |
| PREREVIEW | https://prereview.org/ | Platform for crowdsourcing of preprint reviews | General | |
| sherpa | https://v2.sherpa.ac.uk/romeo/ | Searchable database for journals' policies | General | |
| 6.5. Beyond publication | | | | |
| The Turing way | https://the-turing-way.netlify.app/welcome | Open source community-driven guide to reproducible, ethical, inclusive and collaborative data science | General | 10.5281/zenodo.6533831 |
| Brainhack | https://brainhack.org/ | Collaborative workshop for open neuroscience community including hackathons and unconferences | General | |
| neuromatch academy | https://academy.neuromatch.io/ | Traditional and emerging tools of computational neuroscience and deep learning | General | |
| Neurohackdemy | https://neurohackdemy.org/ | Summer school in neuroimaging and data science | General | |
| World Wide Neuro | https://www.world-wide.org/Neuro/ | Platform for online seminars | General | |
| OHBM Open Science Room | https://ohbm.github.io/osr2021/ | OHBM Open Science Room | General | 10.5281/zenodo.4663060 |

| | | | | |
|-----------------------|---|---|---------|---|
| Brainhack School | https://school.brainhackmtl.org/ | 4 weeks training on neuroimaging with collaborative practical sessions | General | |
| Reproducible Research | https://github.com/leipzig/awesome-reproducible-research | A curated list of reproducible research case studies, projects, tutorials, and media | General | 10_5281/zenodo.3564746 |
| KnowledgeSpace | https://knowledge-space.org/ | Community encyclopedia linking brain research concepts to data, models and literature | General | |
| Awesome Neuroscience | https://github.com/analyticalmonk/awesome-neuroscience | Curated list of awesome neuroscience libraries, software and any content related to the domain | General | |
| R.I.O.T. Science Club | https://riotscience.co.uk/about-us/ | Scientific community providing training in Reproducible, Interpretable, Open, and Transparent Science | General | |

6.6. Towards inclusive, diverse and community driven research

| | | | | |
|--|---|--|---------|--|
| OHBM: Code of Conduct | https://www.humanbrainmapping.org/4a/pages/index.c | The Code of Conduct of the OHBM | General | |
| The Turing Way: Code of Conduct | https://the-turing-way.netlify.app/community-handbook/ | The Code of Conduct of the Turing Way | General | |
| BIDS: Code of Conduct | https://github.com/bids-standard/bids-specification/blob | The Code of Conduct of the BIDS | General | |
| CARE Principles for Indigenous Data Governance | https://www.gida-global.org/care | Global Indigenous Data Alliance (GIDA) FAIR and CARE principles | General | |
| Black in Neuro | https://www.blackinneuro.com/ | A community built to diversify the neuroscience fields | General | |
| Women in Neuroscience repository | https://www.winrepo.org/ | A repository of female neuroscientists to enhance invitations for talks and collaborations | General | |

Other resources

| | | | | |
|---|---|---|---------|--|
| INCF | https://www.incf.org/ | A standards organization for open and FAIR neuroscience | General | |
| OHBM | https://www.humanbrainmapping.org | International society dedicated to using neuroimaging to discover the organization of the human brain | General | |
| NIH Brain Initiative | https://braininitiative.nih.gov/brain-programs/informatics | NIH large scale initiative for tools to support FAIR principles and reproducibility | General | |
| NSF CRCNS | https://beta.nsf.gov/funding/opportunities/collaborative- | NSF program that funds open science projects and supports transatlantic cooperations | General | |
| Human Brain Project | https://www.humanbrainproject.eu/en/ | European initiative to investigate the functional organization of brains | General | |
| Chinese Open Science Network (COSN) | https://open-sci.cn/ | Grass-root network for open science and reproducibility in the Chinese-speaking community | General | |
| ReproNim | https://www.repronim.org/ | Reproducible analyses framework (data, software, standardized description of results and workflows) | MRI | |
| Framework for Open Reprod Research Training (FORRT) | https://forrt.org/ | Framework for Open and Reproducible Research Training | General | |
| The Declaration on Research Assessment (DORA) | https://sfiora.org/ | Initiative to improve the ways in which researchers and the outputs of scholarly research are evaluated | General | |