Alltagskognitionen: Forschungs-"crowd-sourcing" an der Schnittstelle von Psychologie, Neurowissenschaften und Informatik

Michael Hanke, et. al.

http://psychoinformatics.de

Ergebnisse direkter Kooperationen
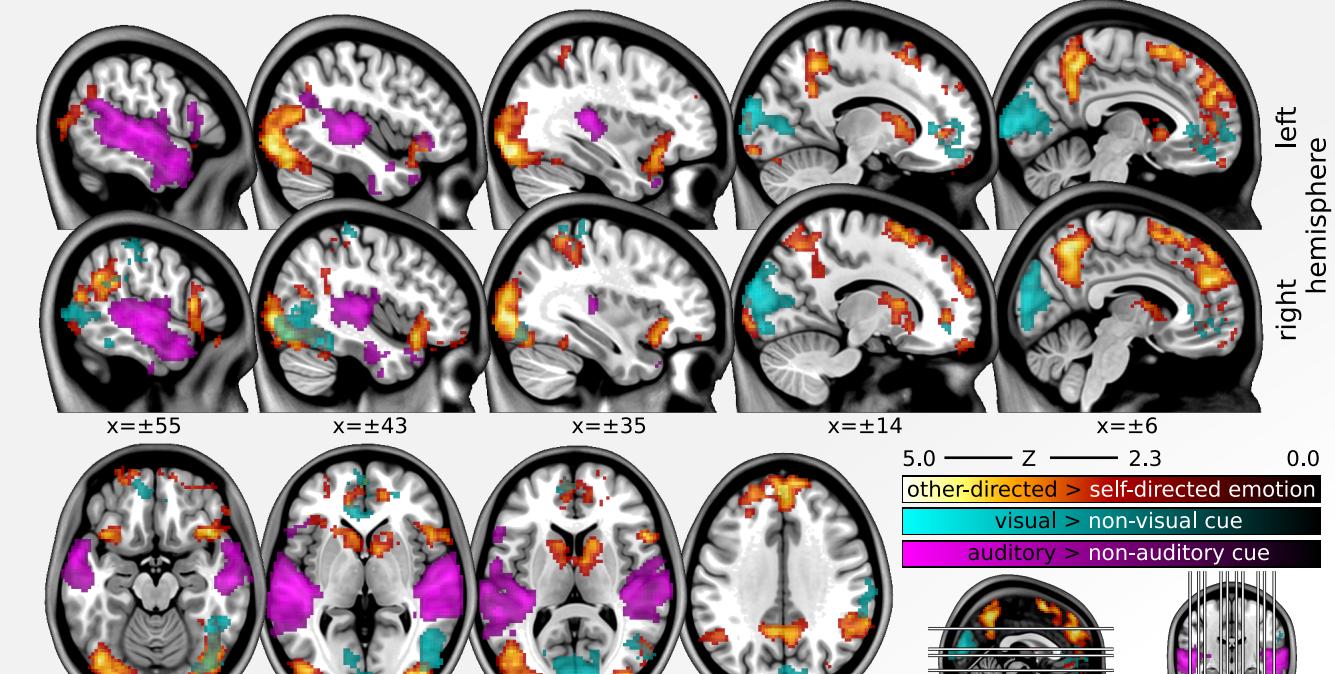
Neuronale Korrelate von Eigenschaften emotionaler Reize in komplexen natürlichen Situationen (Sengupta et al., 2016)
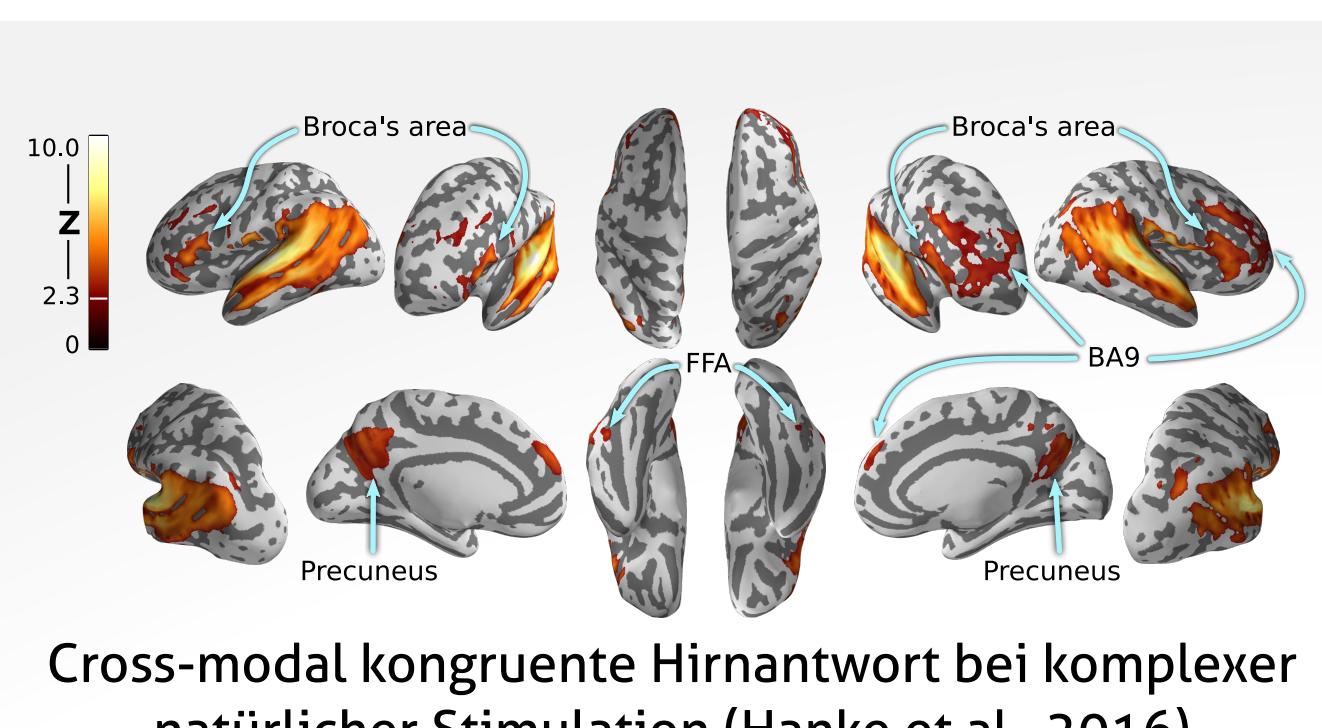

Cross-modal kongruente Hirnantwort bei komplexer natürlicher Stimulation (Hanke et al., 2016)
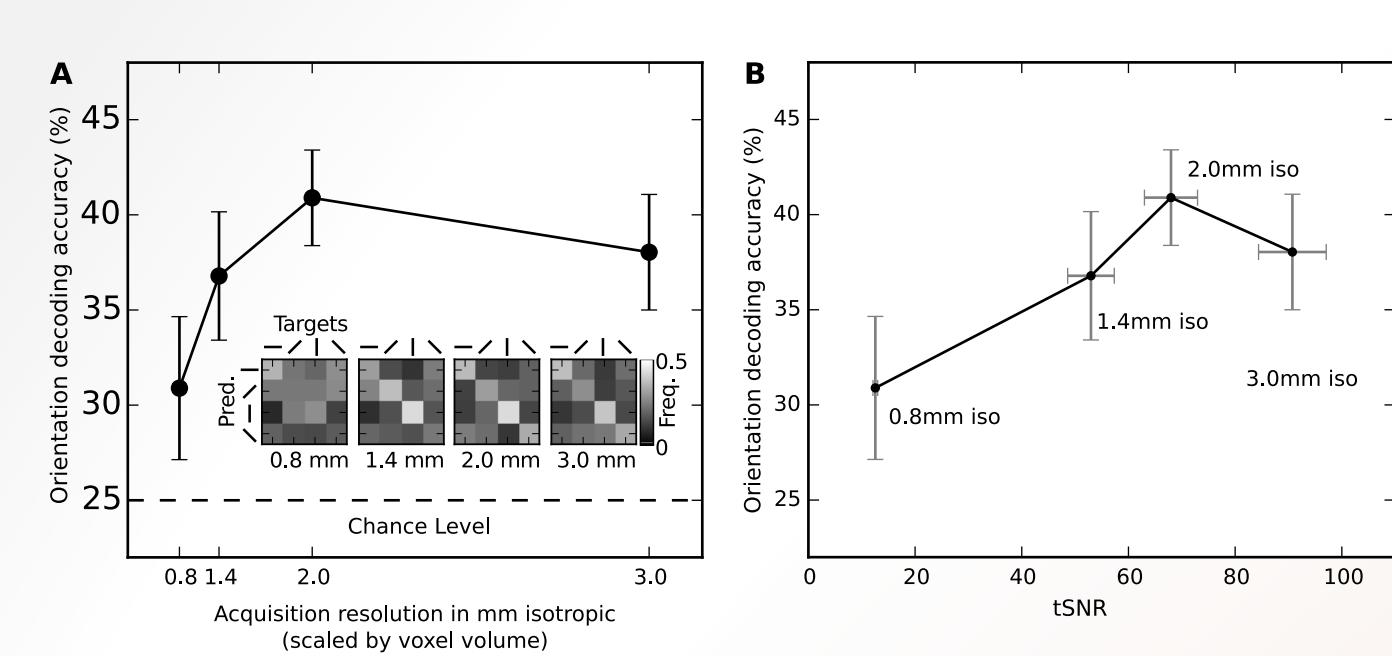
Einfluss von fMRT-Akquisitionsparameter auf die Dekodierbarkeit von Repräsentationen (Sengupta, 2016)
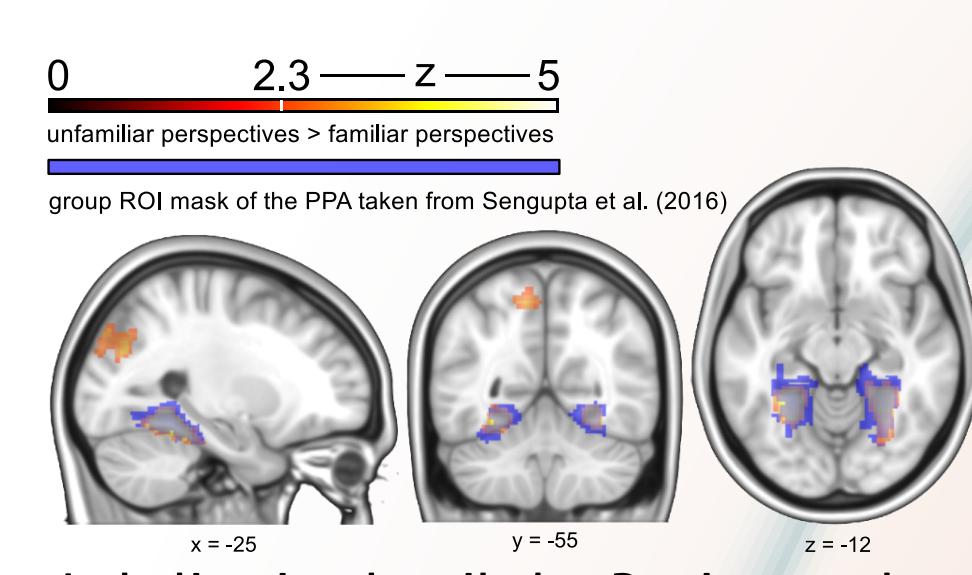
Lokalisation kortikaler Regionen ohne dedizierte Messungen (Häusler, 2016)

Ergebnisse aus unabhängigen Beiträgen
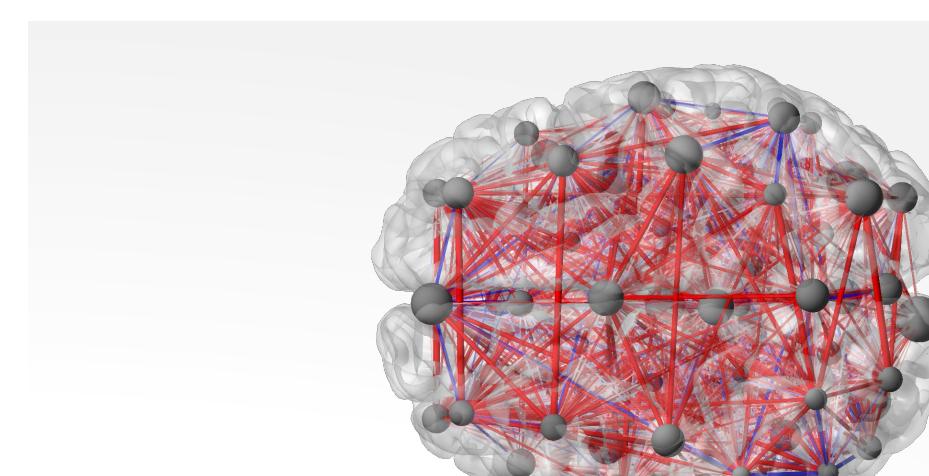
Modellierung kongruenter Hirnantwortmuster; Faktorenanalyse von fMRT-Datensätzen mit 1000 Versuchspersonen (Anderson et al, 2016; Chen et al., 2015)
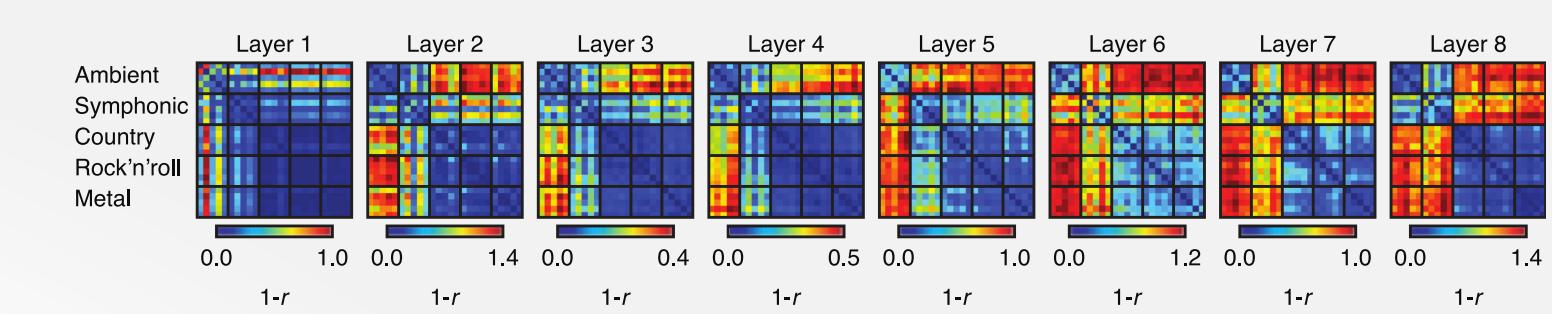
Charakterisierung von Hirnaktivierungsmuster-Strukturen mittels Deep-Learning (Güçlü et al., 2016)
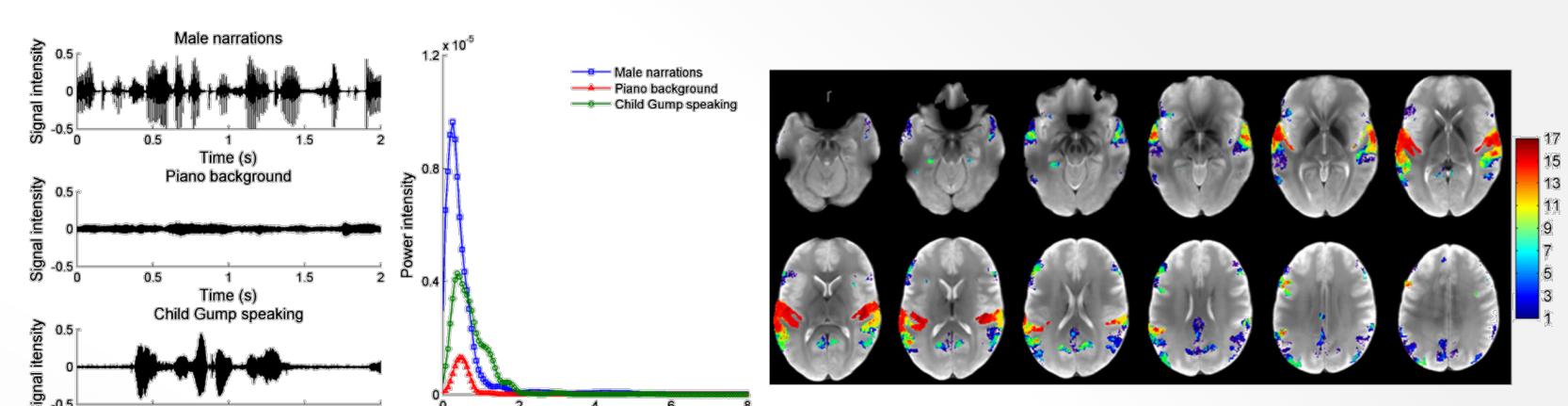
Dekodierung der Repräsentation spektraler Soundkategorien bei komplexer natürlicher Stimulation (Hu et al., 2016)
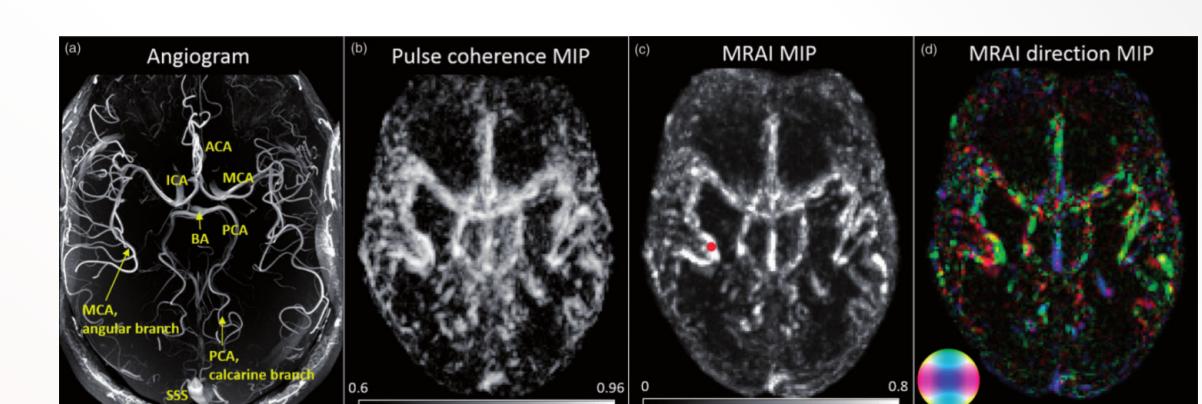
Rekonstruktion von Blutgefäßen und Fluss-richtung aus fMRT-Daten (Voss et al., 2016)

Emotionsintegrations-System (Nguyen et al., 2015)
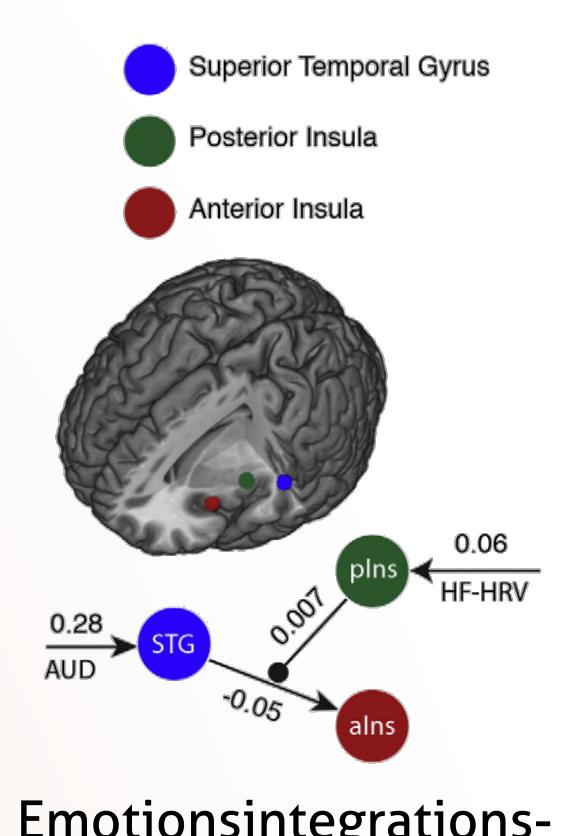
studyforrest.org

Hirnfunktion — Stimulusstruktur — Hirnstruktur
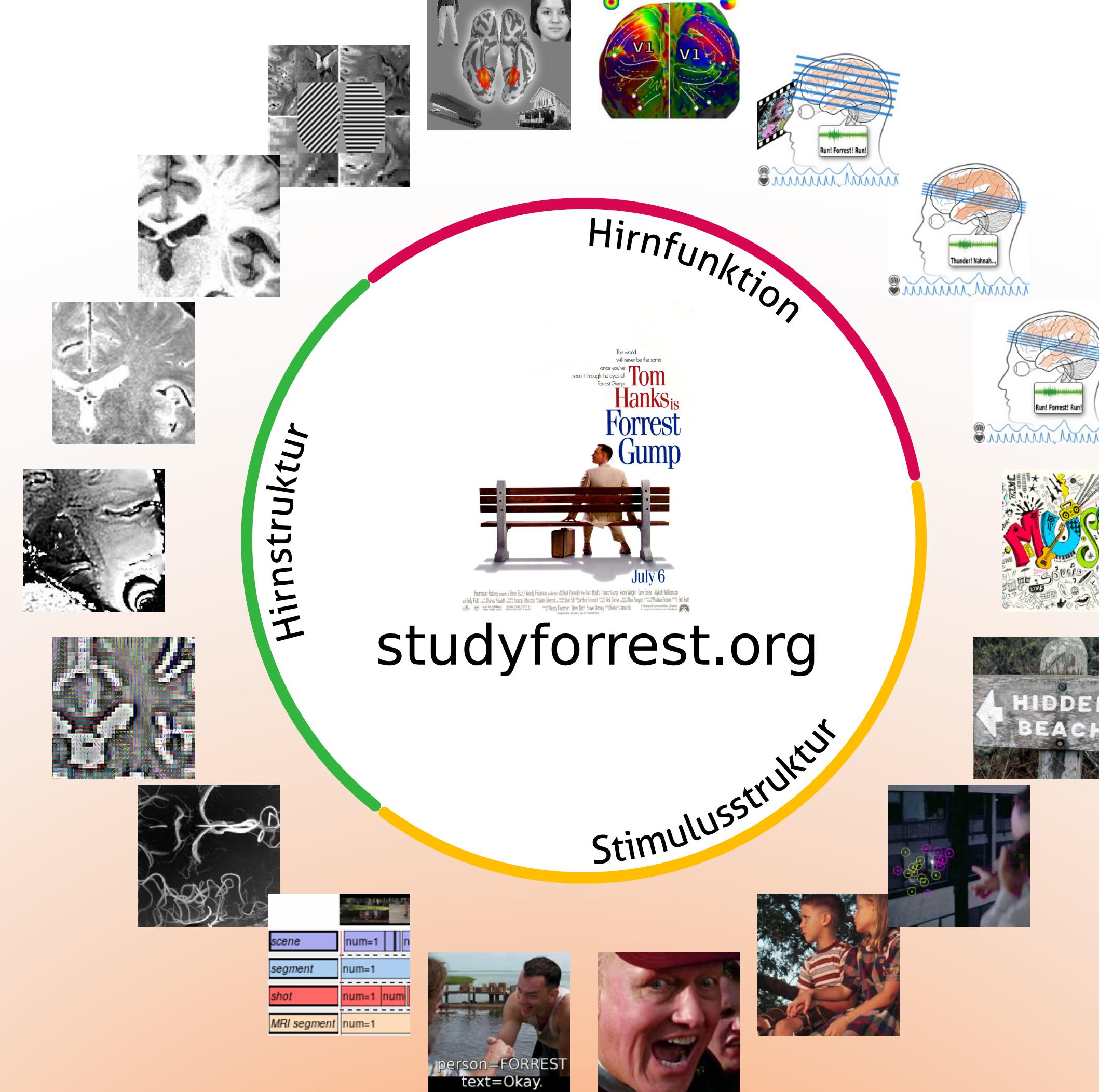
vielfältige, frei verfügbare Daten für verteilte, nicht zentral koordinierte (Re-)Analyse

Ziel

Hirnfunktionsatlas für Alltagskognitionen

anwendungsbereite Implementationen von Algorithmen

umfassende, freie, kostenlose Forschungs-Softwareplattform

Data-sharing und -management Technologie

share — add/derive — results

OpenfMRI

WEB — A — DB
CLOUD

datalad crawler

datalad.org
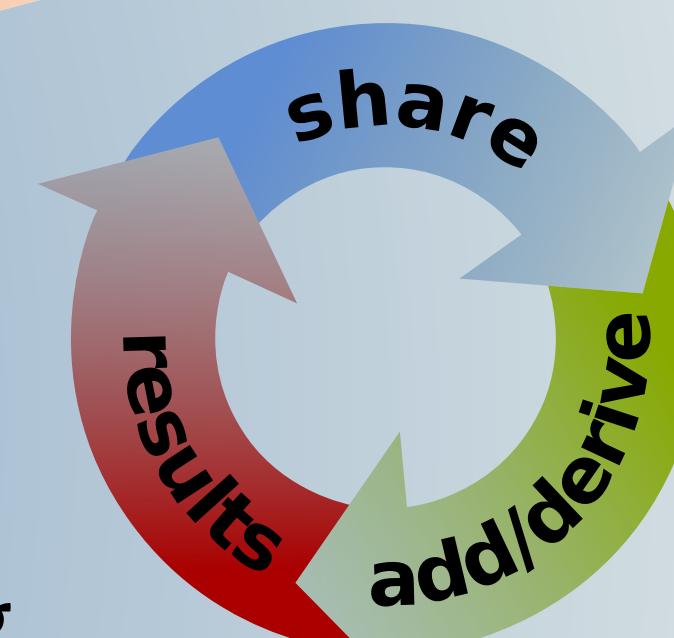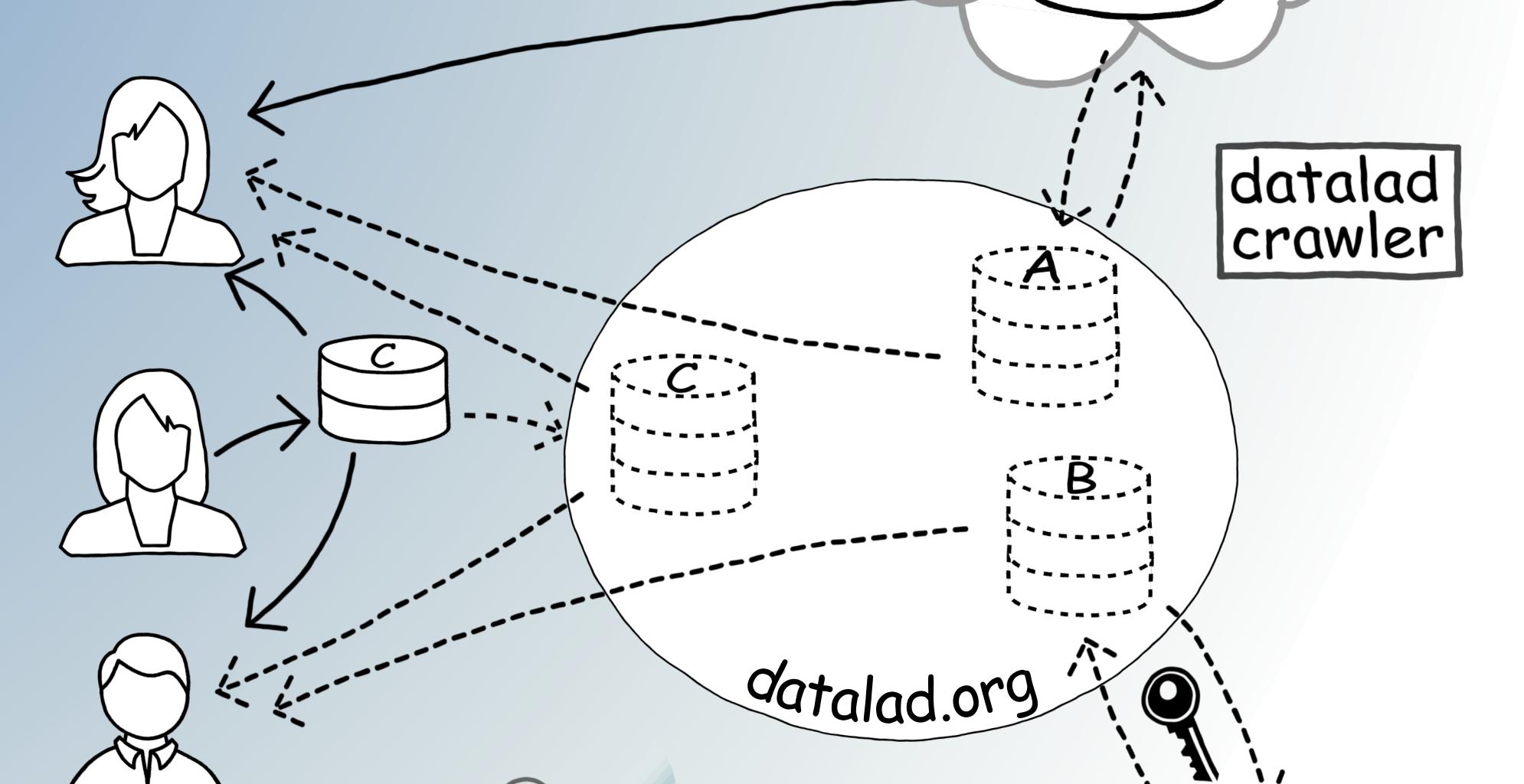
DataLad
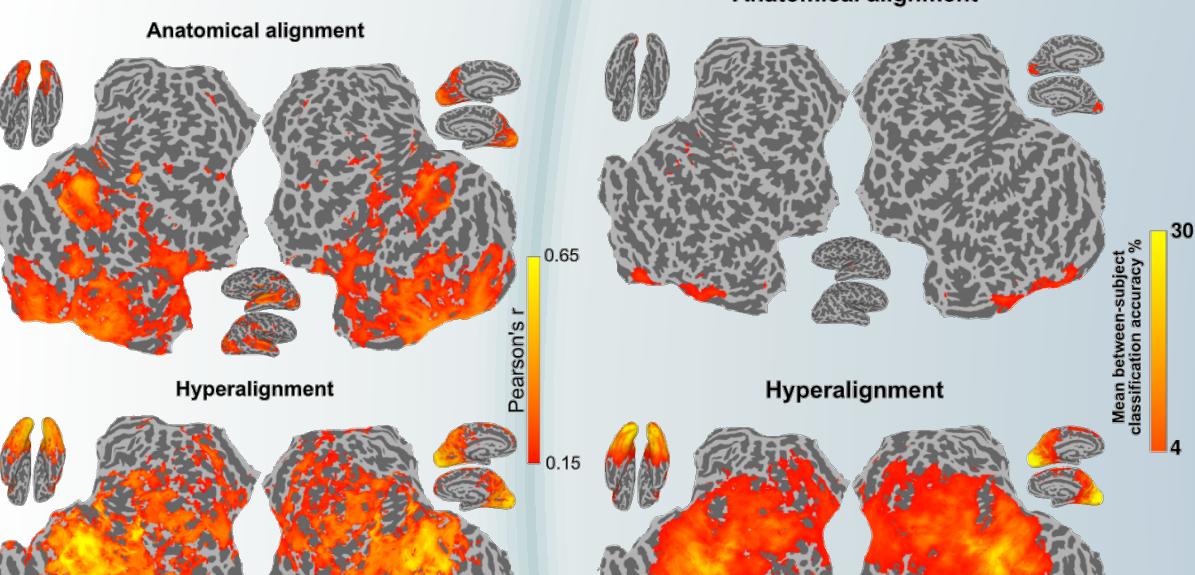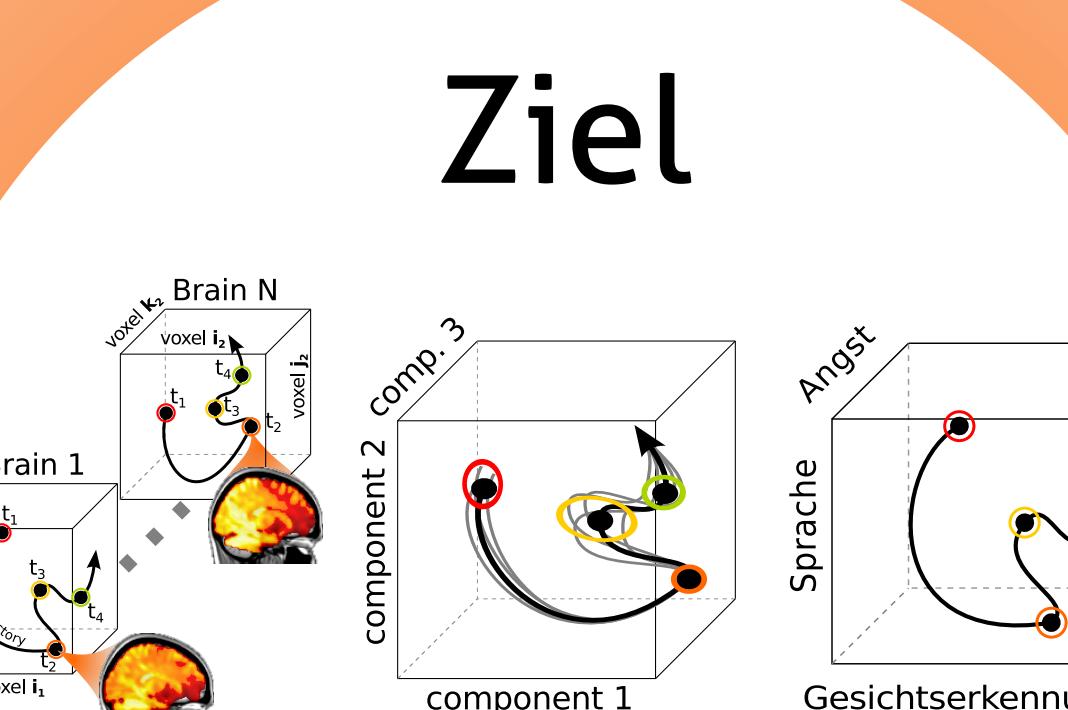
Funktionelles inter-subject alignment von Hirnaktivierungsmustern (Haxby et al., 2011; Guntupalli et al., 2016)

PyMVPA
http://www.pymvpa.org
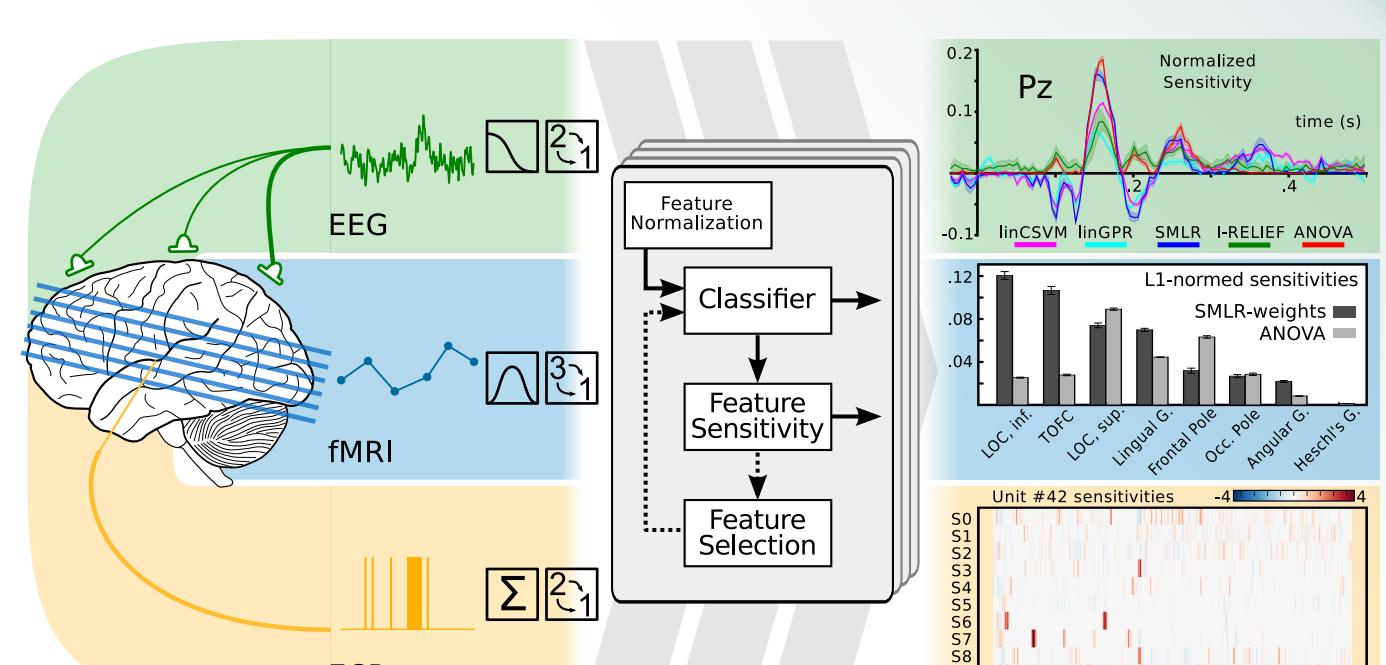
Multi-modale Datenauswertung (Hanke et al., 2009)

biosig NIfTI-1 MGH Vista
Torque vtk itk HDF5 NIfTI-1
GDCM GIfTI
psychtoolbox Praat
CRAN everything! DICOM
PsychoPy MINC
R OpenMEEG
MNE HTCondor
Caret neuroshare
ANTs brian
ODIN python
ITK-SNAP Connectome Workbench
MRTRIX MRIcron
neo Paraview view Invesalius

http://Neuro.Debian.net
(Halchenko und Hanke, 2012)

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