

Sam Gijzen

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Skills

Techniques	Multimodal Machine Learning, Pretraining, Bayesian Statistics, Hypothesis Testing, Experimental Design
Languages	Python, MATLAB, JavaScript, Git
Data Science	Pytorch, Scikit-Learn, SciPy, PyMC, SQL, NumPy, Pandas
Communication	English (Fluent), Dutch (Mother Tongue), German (Intermediate)

Experience

Postdoctoral Researcher: Machine Learning for Clinical Neuroimaging

Berlin, Germany

HERTIE INSTITUTE FOR AI IN BRAIN HEALTH, TÜBINGEN

Jan. 2023 - PRESENT

CHARITÉ BERLIN, DEPARTMENT OF PSYCHIATRY AND PSYCHOTHERAPY

- Multimodal machine learning (MRI, EEG, clinical) for disease diagnosis and therapy outcome prediction
- Methods development in self-supervised deep learning, focused on similarity-based learning for brain data

Research Assistant

London, UK

KING'S COLLEGE LONDON, DEPARTMENT OF NEUROIMAGING

Jul. 2017 - Sep. 2018

- Large-scale brain imaging research and analysis leading to two publications
- Project coordination and communication with scientists, radiologists, pharmacological industry, and medical staff

MSc Internship

London, UK

KING'S COLLEGE LONDON, DEPARTMENT OF NEUROIMAGING

Nov. 2016 - Jul. 2017

- Application of multiple brain imaging techniques and analyses (fMRI, MRS, EEG)
- Thesis: Component Analyses to study timeseries of neural data under pharmacological intervention

Research Assistant

Maastricht, Netherlands

MAASTRICHT UNIVERSITY

Aug. 2016 - Nov. 2016

- Designing, programming, and piloting experimental work using high-field MRI

Education

PhD + Dr. rer. nat. in Computational Cognitive Neuroscience

Berlin, Germany

NEUROCOMPUTATION AND NEUROIMAGING UNIT, FREE UNIVERSITY BERLIN

Oct. 2018 - Dec. 2022

- Bayesian statistics, modeling of behavioural and brain data, reinforcement learning
- Competitive doctoral program (Mind and Brain - 10% Acceptance)
- Winner of DAAD International Research Scholarship (2 per year)
- Thesis: The brain as a generative model: information-theoretic surprise in learning and action [link]

MSc Research Master in Cognitive and Clinical Neuroscience

Maastricht, Netherlands

MAASTRICHT UNIVERSITY

Oct. 2015 - Sep. 2017

- Neuroimaging Internship at King's College London

BSc Psychology

Maastricht, Netherlands

MAASTRICHT UNIVERSITY

Oct. 2012 - Sep. 2015

BSc Industrial Engineering

Eindhoven, Netherlands

TECHNICAL UNIVERSITY EINDHOVEN

Oct. 2014 - Sep. 2015

- Promoted to second year but ended voluntarily.

Publications

EEG-Language Pretraining for Pathology Detection [link]

Arxiv, 2024 GIJSEN, S, RITTER, K

EEG mismatch responses in a multi-modal roving stimulus paradigm provide evidence for probabilistic inference across audition, somatosensation and vision [link]

Human Brain Mapping, 2023 GRUNDEI, M, GIJSEN, S, BLANKENBURG, M

Active inference and the two-step task [link]

Scientific Reports 2022, GIJSEN, S, GRUNDEI, M, BLANKENBURG, M

The effect of ketamine and D-Cycloserine on the high frequency resting EEG spectrum in humans [link]

Scientific Reports 2022, NOTTAGE, J F, ..., GIJSEN, S, MITUL, M

Neural surprise in somatosensory Bayesian learning [link]

PLOS Computational Biology 2021, GIJSEN, S, ..., BLANKENBURG, F

Self-supervised deep learning for encoding pathological between-subject information in EEG data

Under Review, GIJSEN, S, RITTER, K

Evaluating clinical and neuroimaging predictors for CBT outcome in OCD

Under Review, TOCHADSE, M, ..., GIJSEN, S, RITTER, K, KATHMANN, N

The GPR139 agonist TAK-041 produces time-dependent alterations to cerebral blood flow and reward system function in patients with schizophrenia: a randomised placebo-controlled trial

Under Review, HAWKINS, P C T, ..., GIJSEN, S, ..., LAURENZA, A