

Sam Gijzen

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Skills

Techniques	Bayesian Statistics, Machine Learning, Reinforcement Learning, Optimisation, Visualisation, Experimental Design
Languages	Python, MATLAB, JavaScript, Git
Data Science	Numpy, Pandas, Scikit-Learn, PyMC, SciPy, Matplotlib, Pytorch, SQL
Communication	English (Fluent), Dutch (Mother Tongue), German (Intermediate)

Education

PhD Cognitive Computational Neuroscience	Berlin, Germany
NEUROCOMPUTATION AND NEUROIMAGING UNIT, FREE UNIVERSITY BERLIN	Oct. 2018 - PRESENT
<ul style="list-style-type: none">Bayesian statistics, modeling of behavioural and brain data, reinforcement learning agentsAdmission to competitive doctoral program: Berlin School of Mind and Brain	
MSc Research Master in Cognitive and Clinical Neuroscience	Maastricht, Netherlands
MAASTRICHT UNIVERSITY	Oct. 2015 - Sep. 2017
BSc Psychology	Maastricht, Netherlands
MAASTRICHT UNIVERSITY	Oct. 2012 - Sep. 2015
BSc Industrial Engineering	Eindhoven, Netherlands
TECHNICAL UNIVERSITY EINDHOVEN	Oct. 2014 - Sep. 2015
<ul style="list-style-type: none">Promoted to second year but ended voluntarily.	

Experience

Research Assistant	London, UK
KING'S COLLEGE LONDON, DEPARTMENT OF NEUROIMAGING	Jul. 2017 - Sep. 2018
<ul style="list-style-type: none">Large-scale brain imaging research and analysis leading to two publicationsProject coordination and communication with scientists, radiologists, pharmacological industry, and medical staff	
MSc Student Internship	London, UK
KING'S COLLEGE LONDON, DEPARTMENT OF NEUROIMAGING	Nov. 2016 - Jul. 2017
<ul style="list-style-type: none">Application of multiple brain imaging techniques and analyses (fMRI, MRS, EEG)Independent Component Analyses to study both temporal and spatial networks of brain activity to pharmacological intervention	
Research Assistant	Maastricht, Netherlands
MAASTRICHT UNIVERSITY	Aug. 2016 - Nov. 2016
<ul style="list-style-type: none">Designing, programming, and piloting experimental work using high-field MRI	

Extracurricular Activity

Deep Learning Summer School	Online
NEUROMATCH	Aug. 2021
<ul style="list-style-type: none">Gained experience designing, training, and deploying deep learning models in PyTorchGroup project implementing Q-learning (deep reinforcement learning agents)	
Courses	
DATA SCIENCE:	
<ul style="list-style-type: none">Mathematics for Machine Learning - Coursera.comStatistics for Data Science - Free University, Berlin (2019)Computational Neuroscience - Coursera.com	

Projects

RaspiBOLT Node Contributor

RASPIBOLT.ORG

Jan. 2022 - PRESENT

- Contributing to the open-source Bitcoin and Lightning "Do-everything-yourself" node.

Statistical Rethinking in Python and PyMC

'STATISTICAL RETHINKING' BY RICHARD MCELREATH

PRESENT

- Implementation of this Bayesian statistics book into Python and PyMC

Publications

Neural surprise in somatosensory Bayesian learning [link]

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

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

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

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

bioRxiv GRUNDEI, M, GIJSEN, S, BLANKENBURG, M