

## Address

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## ORCID

click here to check my  
orcid

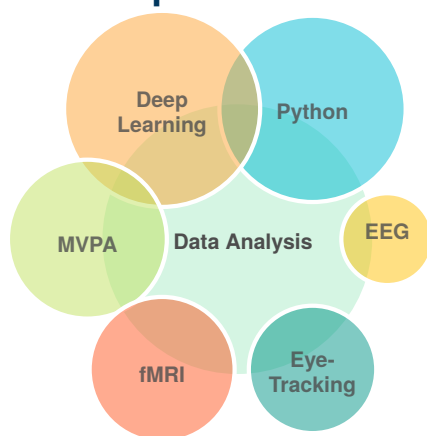
## Git

gitlab.com/RHeinen

## OSF

osf.io/f9nzs/

## Expertise



## Programming

Python ★★★★★  
R ★★★★★  
Matlab ★★★★★  
FSL ★★★★★  
Latex ★★★★★  
Linux ★★★★★  
Java ★★★★★

## Education

- since 2016 **PhD candidate in Neuroscience** Ruhr University Bochum, Germany  
PhD project: "Understanding Neural Representations Through Deep Neural Networks"
- 2014 - 2016 **Master of Science in Psychology** Ruhr University Bochum, Germany  
Thesis title: "Building a general visual decoder using encoding-decoding models in fMRI"
- 2011 - 2014 **Bachelor of Science in Psychology** University of Bonn, Germany  
Thesis title: "Individual differences in empathy and vicarious embarrassment correlate with grey and white matter differences"

## Research Projects

- Memory** Differences in neural representations during perception and imagination  
Manipulating consolidation during sleep using targeted memory reactivation  
Navigating through conceptual spaces  
Studying the representational formats of memories  
Event segmentation during episodic memory recall
- Modeling** Applying forward models to fMRI/EEG  
Using various DNNs and NLP models to analyze data patterns  
Low and high level semantic representations in humans and machines  
Implementing categorization learning models based on behavioral data

## Publications

- Bierbrauer, Fellner, **Heinen**, Wolf & Axmacher (2021)  
**The memory trace of a stressful episode**  
*Current Biology. (accepted)*
- Hucke, **Heinen**, Pacharra, Wascher & van Thriel (2021)  
**Spatiotemporal Processing of Bimodal Odor Lateralization in the Brain Using Electroencephalography Microstates and Source Localization**  
*Frontiers in Neuroscience. doi:10.3389/fnins.2020.620723*
- Liu, Zhang, Ni, Ren, Yang, Lu, Wang, **Heinen**, Axmacher & Xue (2020)  
**Stable maintenance of multiple representational formats in human visual short-term memory**  
*Proceedings of the National Academy of Sciences. doi:10.1073/pnas.2006752117*
- Schenk, Bellebaum, Lech, **Heinen** & Suchan (2020)  
**Play to win: Action Video Game Experience and Attention Driven Perceptual Exploration in Categorization Learning**  
*Frontiers in Psychology. doi:10.3389/fpsyg.2020.00933*

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**Heinen, Deuker, Naselaris & Axmacher (2019, September 13-16)**  
**Using deep neural network features to predict voxelwise activity in ultra-high field fMRI**

*Paper presented at CCN 2019. doi:10.32470/CCN.2019.1165-0*

Melchers, Markett, Montag, Trautner, Weber, Lachmann, Buss, **Heinen** & Reuter (2015)

**Reality TV and vicarious embarrassment: An fMRI study**

*NeuroImage. doi:/10.1016/j.neuroimage.2015.01.022*

## Conferences

2020	<b>2nd International Sleep Replay Workshop</b> <b>Montreal AI and Neuroscience (MAIN)</b> <b>NeurIPS</b>	online
2020	<b>Joined Berlin Bochum Phd Symposium</b> Organization, Participation and Talk: <i>Utilizing deep learning to study memory</i>	online
2019	<b>Cognitive Computational Modeling</b> <i>Using deep neural network features to predict voxelwise activity in ultra-high field fMRI</i>	Poster and Paper
2016	<b>International Conference on Memory</b> <i>Vulnerability of fMRI-based lie detection to covert counter measures</i>	Poster

## Teaching

since 2017 **fMRI Theory and Practical**

since 2017 **Psychopharmacology**

2018 **Classical Cases in Neuropsychology**

### Supervised theses

- Memory performance for audio-visual stimuli
- Using TMR and cDNNs to study consolidation during sleep
- Effect of TMR on remembering and abstracting visual information
- Audio context during sleep shapes perceptual and conceptual memory
- Audio context during sleep improves perceptual memory
- Implementing a paradigm to study navigation in semantic spaces