

Curriculum Vitae

Prof. Dr. Daniel Kaiser

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Education

- 2015 PhD in Cognitive and Brain Sciences (CIMEC, University of Trento)
Supervisor: Marius Peelen
Thesis title: *Inter-object grouping in visual processing: How the brain uses real-world regularities to carve up the environment*
- 2012 Diploma in Psychology, Minor in Statistics (Regensburg University)
Supervisors: Gyula Kovács, Mark Greenlee
Thesis title: *Dissociating repetition priming and adaptation-aftereffect related neural activity in the human brain*

Research Experience

- 2021 - Professor (W1) for Neural Computation at the Department for Mathematics and Computer Science, Physics, Geography (Justus-Liebig-Universität Gießen)
- 2019 - 2021 Lecturer (Assistant Professor) at the Department of Psychology (University of York)
- 2017 - 2019 Postdoctoral researcher in the *Neural Dynamics of Visual Cognition* group (Freie Universität Berlin, with Radoslaw Cichy)
- 2016 Visiting postdoctoral researcher in the *Active Vision and Cognition* group (BCCN, Humboldt University Berlin, with Sven Ohl and Timo Stein)
- 2016 - 2017 Postdoctoral researcher in the project *Characterizing and Improving Brain Mechanisms of Attention* (CIMEC, University of Trento, with Marius Peelen)
- 2012 - 2015 PhD student in the *Visual Cognitive Neuroscience* group (CIMEC, University of Trento, with Marius Peelen)

Teaching Experience

- 2023 Seminar *Neural Computation II* (BSc Data Science, JLU Gießen)
- 2022 Lecture *Sensation and Perception* (BSc Psychology, JLU Gießen)
- 2022 Lecture *Neural Computation I* (BSc Data Science, JLU Gießen)
- 2022 Seminar *Neural Computation I* (BSc Data Science, JLU Gießen)
- 2021 Lecture *Cognitive Neuroscience Methods* (BSc Psychology, University of York)
- 2020 Lecture *Brain Mechanisms of Visual Recognition* (BSc Psychology, University of York)
- 2020 Seminar *Third Year Empirical Project* (BSc Psychology, University of York)
- 2020 Lecture *Cognitive Neuroscience Methods* (BSc Psychology, University of York)
- 2019 Seminar *Cognitive Neuroscience* (MSc Social, Cognitive and Affective Neuroscience, FU Berlin, with Radoslaw Cichy)
- 2018 Seminar *MEG and EEG methods for imaging in neuroscience* (PhD, Karolinska Institute Stockholm, with Daniel Lundqvist and Radoslaw Cichy)
- 2016 Lecture *Foundations of Cognitive Neuroscience* (MSc Cognitive Science, University of Trento, with Marius Peelen)
- 2015 Lecture *Current Debates in Cognitive Neuroscience* (MSc Cognitive Science, University of Trento, with Daniel Adams)
- 2014/15 Summer school course *The Social Brain* (Harvard University, with Paul Downing and Marius Peelen)

Grants and Awards

- 2023 – 2027 ERC starting grant *Personalized priors – How idiosyncrasies in internal models explain individual differences in natural vision* – 1,484,625€
- 2023 – 2026 DFG research grant *Probing prefrontal influences on the emergence of visual category representations* – 409,195€
- 2022 – 2025 DFG research grant *Spatiotemporal prediction in the cortical processing of natural visual information (within SFB/TRR135)* – 426,800€
- 2018 – 2021 DFG research grant *Objects in Scenes* – 340,320€
- 2019 Research Startup Stipend by the Department of Education and Psychology of Freie Universität Berlin – 2,000€
- 2018/19/22 DAAD Conference Travel Stipends – 5,000€
- 2017 CIMeC Young Researcher Award (among the three best junior researchers in 10 years) – 500€

- 2016 Humboldt Talent Travel Award, Humboldt University Berlin
(one month visiting postdoc) – 3,000€
- 2015 Abstract award at Workshop on Concepts, Actions and Objects – 200€
- 2013/14/15 Best presentation awards at CIMeC Doctoral School Day – 600€
- 2012 – 2015 PhD grant of the CIMeC, University of Trento – monthly stipend (1,200€)
- 2011 Research internship stipend of the German Academic Scholarship Foundation – 1,100€
- 2009 – 2012 Studentship of the German Academic Scholarship Foundation – monthly stipend (300€)

Supervision

- 2023 – Dr. Lu-Chun Yeh (Postdoc, JLU Gießen)
- 2022 – Dr. Sanjeev Nara (Postdoc, JLU Gießen)
- 2021 – Rico Stecher (PhD Student, JLU Gießen)
- 2021 – Gongting Wang (PhD Student, FU Berlin, Co-Supervision with Radoslaw Cichy)
- 2019 – Matthew Foxwell (PhD Student, University of York)
- 2019 – Lixiang Chen (PhD Student, FU Berlin, Co-Supervision with Radoslaw Cichy)
- 2014 – 8 research assistants, 15+ BSc/MSc students

Reviewing

Journals: Attention Perception & Psychophysics, Behavioral Brain Research, Cerebral Cortex, Cognition, Communications Biology, Cortex, eLife Sciences, eNeuro, European Journal of Neuroscience, Frontiers in Human Neuroscience, Journal of Experimental Psychology: Human Perception & Performance, Journal of Experimental Psychology: Learning Memory & Cognition, Journal of Neurophysiology, Journal of Neuroscience, Journal of Cognitive Neuroscience, Nature Communications, Nature Human Behavior, Neuroimage, Neuropsychologia, Neuroscience, PeerJ, Perception, PloS Biology, PloS ONE, Proceedings of the Royal Society B, Psychological Science, Psychophysiology, Trends in Cognitive Sciences, Visual Cognition.

Grant Agencies: Biotechnology and Biological Sciences Research Council (UK), Canadian Foundation for Innovation, Research Council of Norway

Preprints

Foxwell MJ*, Wang G*, Cichy RM, Pitcher D, Kaiser D. (submitted) Individual differences in internal models explain idiosyncrasies in scene perception. *equal contribution [preprint](#)

Pitcher D, Sliwiska MW, Kaiser D. (submitted) TMS disruption of the lateral prefrontal cortex increases neural activity in the default mode network when naming facial expressions. [preprint](#)

Goupil N, Kaiser D., Papeo L. (submitted) Category-specific effects of high-level relations in visual search. [preprint](#)

Kaiser D., Stecher R, Doerschner K. (submitted) EEG decoding reveals neural predictions for naturalistic material behaviors. [preprint](#)

Chen L, Cichy RM*, Kaiser D.*. (submitted) Alpha-frequency feedback to early visual cortex orchestrates coherent natural vision. *equal contribution [preprint](#)

Kucuk E, Foxwell MJ, Kaiser D., Pitcher D. (submitted) Moving and static faces, bodies, objects and scenes are differentially represented across the three visual pathways. [preprint](#)

Iamshchinina P, Haenelt D, Trampel R, Weiskopf N, Kaiser D.*., Cichy RM*. (submitted) Benchmarking GE-BOLD, SE-BOLD, and SS-SI-VASO sequences for depth-dependent separation of feedforward and feedback signals in high-field MRI. *equal contribution [preprint](#)

Journal publications

Kaiser D. (2022) Spectral brain signatures of aesthetic natural perception in the alpha and beta frequency bands. *J Neurophysiol* 128: 1501-1505. [PDF](#)

Kaiser D. (2022) Characterizing dynamic neural representations of scene attractiveness. *J Cogn Neurosci* 34: 1988-1997. [PDF](#)

Chen L, Cichy RM*, Kaiser D.*. (2022) Semantic scene-object consistency modulates N300/400 EEG components, but does not automatically facilitate object representations. *Cereb Cortex* 32: 3553-3567. *equal contribution [PDF](#)

Iamshchinina P, Karapetian A, Kaiser D.*., Cichy RM*. (2022) Resolving the time course of visual and auditory object categorization. *J Neurophysiol* 127: 1622-1628. *equal contribution [PDF](#)

Kaiser D., Jacobs AM, Cichy RM. (2022) Modelling brain representations of abstract concepts. *PLOS Comput Biol* 18: e1009837. [PDF](#)

Kaiser D, Cichy RM. (2021) Parts and wholes in scene processing. *J Cogn Neurosci* 34: 4-15. [PDF](#)

Iamshchinina P, Kaiser D, Yakupov R, Haenelt D, Sciarra A, Mattern H, Lüsebrink F, Duzel E, Speck O, Weiskopf N, Cichy RM. (2021) Perceived and mentally rotated contents are differentially represented in cortical depth of V1. *Commun Biol* 4: 1069. [PDF](#)

Ambrus GG, Eick CM, Kaiser D, Kovács G. (2021) Getting to know you: emerging neural representations during face familiarization. *J Neurosci* 41: 5687-5698. [PDF](#)

Kaiser D, Häberle G, Cichy RM. (2021) Coherent natural scene structure facilitates the extraction of task-relevant object information in visual cortex. *Neuroimage* 340: 118365. [PDF](#)

Stein T, Kaiser D, Fahrenfort JJ, van Gaal S. (2021) The human visual system differentially represents subjectively and objectively invisible stimuli. *PLOS Biol* 19: e3001241. [PDF](#)

Kaiser D, Nyga K. (2020) Tracking cortical representations of facial attractiveness using time-resolved representational similarity analysis. *Sci Rep* 10: 16852. [PDF](#)

Kaiser D, Inciuraitė G, Cichy RM. (2020) Rapid contextualization of fragmented scene information in the human visual system. *Neuroimage* 219: 117045. [PDF](#)

Xie S, Kaiser D, Cichy RM. (2020) Visual imagery and perception share neural representations in the alpha frequency band. *Curr Biol* 30: 2621-2627. [PDF](#)

Kaiser D, Häberle G, Cichy RM. (2020) Real-world structure facilitates the rapid emergence of scene category information in visual brain signals. *J Neurophysiol* 124: 145-151. [PDF](#)

Kaiser D, Häberle G, Cichy RM. (2020) Cortical sensitivity to natural scene structure. *Hum Brain Mapp* 41: 1286-1295. [PDF](#)

Battistoni E, Kaiser D, Hickey C, Peelen MV. (2020) The time course of spatial attention during naturalistic visual search. *Cortex* 122: 225-234. [PDF](#)

Ambrus GG*, Kaiser D*, Cichy RM, Kovács G. (2019) The neural dynamics of familiar face recognition. *Cereb Cortex* 29: 4775-4784. *equal contribution [PDF](#)

Kaiser D, Turini J, Cichy RM. (2019) A neural mechanism for contextualizing fragmented inputs during naturalistic vision. *eLife* 8: e48182. [PDF](#)

Kaiser D, Quek GL, Cichy RM, Peelen MV. (2019) Object vision in a structured world. *Trends Cogn Sci* 23: 672-685. [PDF](#)

Proklova D, Kaiser D, Peelen MV. (2019) MEG sensor patterns reflect perceptual but not categorical similarity of animate and inanimate objects. *Neuroimage* 193: 167-177. [PDF](#)

Cichy RM, Kaiser D. (2019) Deep neural networks as scientific models. *Trends Cogn Sci* 23: 305-317. [PDF](#)

Kaiser D, Cichy RM. (2018) Typical visual-field locations enhance processing in object-selective channels of human occipital cortex. *J Neurophysiol* 120: 848-853. [PDF](#)

Kaiser D, Cichy RM. (2018) Typical visual-field locations facilitate access to awareness for everyday objects. *Cognition* 180: 118-122. [PDF](#)

Kaiser D, Moeskops MM, Cichy RM. (2018) Typical retinotopic locations impact the time course of object coding. *Neuroimage* 176: 372-379. [PDF](#)

Kaiser D, Peelen MV. (2018) Transformation from independent to integrative coding of multi-object arrangements in human visual cortex. *Neuroimage* 169: 334-341. [PDF](#)

Kaiser D, Haselhuhn T. (2017) Facing a regular world: How spatial object structure shapes visual processing. *J Neurosci* 37: 1965-1967. [PDF](#)

Kaiser D, Oosterhof NN, Peelen MV. (2016) The neural dynamics of attentional selection in natural scenes. *J Neurosci* 36: 10522-10528. [PDF](#)

Stein T, Kaiser D, Hesselmann G. (2016) Can working memory be non-conscious? *Neurosci Conscious* 1: 1-3. [PDF](#)

Proklova D*, Kaiser D*, Peelen MV. (2016) Disentangling representations of object shape and object category in human visual cortex: the animate-inanimate distinction. *J Cogn Neurosci* 28: 680-692. *equal contribution [PDF](#)

Kaiser D*, Azzalini DC*, Peelen MV. (2016) Shape-independent object category responses revealed by MEG and fMRI decoding. *J Neurophysiol* 115: 2246-2250. *equal contribution [PDF](#)

Kaiser D, Stein T, Peelen MV. (2015) Real-world spatial regularities affect visual working memory for objects. *Psychon Bull Rev* 22: 1784-1790. [PDF](#)

Stein T, Kaiser D, Peelen MV. (2015) Interobject grouping facilitates visual awareness. *J Vis* 15: 1-10. [PDF](#)

Hickey C, Kaiser D, Peelen MV. (2015) Reward guides attention to object categories in real-world scenes. *J Exp Psychol Gen* 144: 264-273. [PDF](#)

Keresztes A, Kaiser D, Kovács G*, Racsmány M*. (2014) Testing promotes long-term learning via stabilizing activation patterns in a large network of brain areas. *Cereb Cortex* 24: 3025-3035. *equal contribution [PDF](#)

Kaiser D, Stein T, Peelen MV. (2014) Object grouping based on real-world regularities facilitates perception by reducing competitive interactions in visual cortex. *Proc Natl Acad Sci USA* 111: 11217-11222. [PDF](#)

Kaiser D*, Strnad L*, Seidl KN, Kastner S, Peelen MV. (2014) Whole person-evoked fMRI activity patterns in human fusiform gyrus are accurately modeled by a linear combination of face- and body-evoked activity patterns. *J Neurophysiol* 111: 82-90. *equal contribution [PDF](#)

Kaiser D, Walther C, Schweinberger SR, Kovács G. (2013) Dissociating the neural bases of repetition-priming and adaptation in the human brain for faces. *J Neurophysiol* 110: 2727-2738. [PDF](#)

Kovács G, Kaiser D, Kaliukhovich DA, Vidnyánszky Z, Vogels R. (2013) Repetition probability does not affect fMRI repetition suppression for objects. *J Neurosci* 33: 9805-9812. [PDF](#)

Walther C, Schweinberger SR, Kaiser D, Kovács G. (2013) Neural correlates of priming and adaptation in familiar face perception. *Cortex* 49: 1963-1977. [PDF](#)

Gießen, April 2023