

Rémi Gau

Languages: French, English, German (basics)

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 [All my links](#)

CURRENT POSITION

Software research engineer at [team MIND](#) at INRIA-Saclay, Palaiseau, (France)

ACADEMIC QUALIFICATIONS

- **2023-2024:** **Research associate**
Laboratories:
[COrigami laboratory](#), the Neuro, McGill university, Montréal, Québec, Canada
Supervisor: Pr. Jean-Baptiste Poline
- **2019-2023:** **Post-Doctoral fellow**
Laboratories:
[Crossmodal perception and plasticity laboratory](#), Université Catholique de Louvain la Neuve, Belgium
Supervisor: Pr. Olivier Colignon
- **2018:** **No professional activity**
- **2012-2017:** **Research associate**
Laboratories:
Computational Cognitive Neuroimaging Laboratory, School of psychology, University of Birmingham, UK
and *Max Planck Institute for biological cybernetics*, Tübingen, Germany
Supervisor: Pr. Dr. MD. Uta Noppeney
- **2011:** **No professional activity**
- **2006-2010:** **PhD in neuroscience** **Defended in September 2010**
University Pierre et Marie Curie, Paris, France
Doctoral School « Cerveau, Cognition, Comportement »
first class honours
Thesis title: Serotonergic neurons of the lateral paragigantocellular nucleus: roles in pain modulation and baroreflex inhibition
Laboratory: Psychiatry and Neurosciences Center
Supervisor: Dr. MD. Jean-François Bernard

Graduate qualifications

- **2005-2006:** Master of Integrative Biology and Physiology: Neurosciences
University Pierre et Marie Curie, Paris, France
- **2004-2005:** Master of Neuropsychology
University Paul Sabatier, Toulouse, France
- **2003-2004:** Master of Cellular Biology and Animal Physiology
McGill university, Montréal, Canada, through the CREPUQ exchange program with the University of Montpellier II, France
- **2002-2003:** License of Cellular Biology and Animal Physiology
University of Montpellier II, France

SCIENTIFIC CONTRIBUTIONS

peer reviewed papers

- Niso, G., Botvinik-Nezer, R., Appelhoff, S., et al.; [Open and reproducible neuroimaging: from study inception to publication](#); *Neuroimage*; 2022; doi:10.1016/j.neuroimage.2022.119623 
- Bourget M-H, Kametsky L, Ghosh SS, et al.; [Microscopy-BIDS: An Extension to the Brain Imaging Data Structure for Microscopy Data](#); *Frontiers in Neuroscience*; 2022; doi:10.3389/fnins.2022.871228
- Clement P., Castellaro M, Okell T. W., Thomas D. L. , et al.; [ASL-BIDS, the Brain Imaging Data Structure Extension for Arterial Spin Labeling](#); *Scientific data*; 2022; doi:10.1038/s41597-022-01615-9
- Norgaard M., Matheson G. J., Hansen H. D., Thomas A., et al.; [PET-BIDS, an extension to the brain imaging data structure for positron emission tomography](#); *Scientific data*; 2022; doi:10.1038/s41597-022-01164-1
- Levitis E, Gould van Praag C D, **Gau R**, Heunis S, et al.; [Centering inclusivity in the design of online conferences - An OHBM-Open Science perspective](#); *GigaScience*; 2021; doi:10.1093/gigascience/giab051
- **Gau R**, Noble S, Heuer K, Bottenhorn K L, Bilgin I P, Yang Y, et al; [Brainhack: developing a culture of open, inclusive, community-driven neuroscience](#); *Neuron*; 2021; doi:10.31234/osf.io/rytjq  
- Botvinik-Nezer R, et al; [Variability in the analysis of a single neuroimaging dataset by many teams](#); *Nature*; 2020; doi:10.1038/s41586-020-2314-9  
- **Gau R**, Bazin PL, Trampel R, Turner R, Noppeney U; [Resolving multisensory and attentional influences across cortical depth in sensory cortices](#); *eLife*; 2018; doi:10.7554/eLife.46856  
- **Gau R**, Noppeney, U; [How prior expectations shape multisensory perception](#); *Neuroimage*; 2016 doi:10.1016/j.neuroimage.2015.09.045  
- **Gau R**, Sevoz-Couche C, Hamon M, Bernard JF; [Noxious stimulation excites serotonergic neurons: a comparison between the lateral paragigantocellular reticular and the raphe magnus nuclei](#); *Pain*; 2013; doi:10.1016/j.pain.2012.09.012
- **Gau R**, Sevoz-Couche C, Laguzzi R, Hamon M, Bernard JF; [Inhibition of Baroreflex by Noci-](#)

ception: A Key Role for Lateral Paragigantocellular Serotonergic Cells; *Pain*; 2009; doi:[10.1016/j.pain.2009.09.018](https://doi.org/10.1016/j.pain.2009.09.018)

- Bernard JF, Netzer F, **Gau R**, Hamon M, Laguzzi R, Sevoz-Couche C; Critical role of B3 serotonergic cells in baroreflex inhibition during the defense reaction triggered by dorsal periaqueductal gray stimulation; *Journal of comparative anatomy*; 2008; doi:[10.1002/cne.21532](https://doi.org/10.1002/cne.21532)

preprints

- Poldrack R, et al.; The past, present, and future of the brain imaging data structure (BIDS) *arxiv*; 2023; doi:[10.48550/arXiv.2309.05768](https://doi.org/10.48550/arXiv.2309.05768)
- Šoškić A, Kovic V, Algermissen J, Fischer NL, Ganis G, **Gau R** et al.; ARTEM-IS for ERP: Agreed Reporting Template for EEG Methodology-International Standard for documenting studies on Event-Related Potentials; *psyarxiv*; 2022; doi:[10.31234/osf.io/mq5sy](https://doi.org/10.31234/osf.io/mq5sy)
- Kovacs M, Jaquiere M, Algermissen J, Arriaga P, **Gau R** et al.; Lab manuals for efficient and high quality science in a happy and safe work environment, *metaarxiv*, 2022; doi:[10.31222/osf.io/bzcxg](https://doi.org/10.31222/osf.io/bzcxg)
- Govaart G. H. et al.; EEG ERP Preregistration Template, *metaarxiv*, 2022; doi:[10.31222/osf.io/4nvpt](https://doi.org/10.31222/osf.io/4nvpt)
- Appelhoff S, Bates JF, Ghosh S et al.; BIDS and the NeuroImaging Data Model (NIDM), *F1000Research*, 2019; doi:[10.7490/f1000research.1117650.1](https://doi.org/10.7490/f1000research.1117650.1)


talks

Conference presentations

- BIDS: Open-source standard for the organization of neuro data [Neuro OpenScience Workshop](#), Brain institute; Paris, France; 22nd November 2023
- [Github workshop](#); [GLIMR](#) annual meeting; Kuşadası, Turkey; 29th September 2022
- Fully transparent ERP & MRI study methodology descriptions with ARTEM-IS and eCO-BIDAS; INCF annual assembly 2022; 12th September 2022
- BIDS: A standardized way to organize “neuroimaging” data; Inauguration of the data ambassador network of the Brussels-Wallonia federation; Brussels, Belgium; 24th May 2022
- Open science: what is it? why do it?; Dutch Neuroscience meeting 2021; Virtual; 10th June 2021 
- CPP BIDS: a lightweight toolbox for behavioral experiments to help you with good data management practices; Young researchers’ day of the institute of Neuroscience of the université Catholique de Louvain; Virtual; 18th November 2020
- Symposium on the Neuroimaging Analysis Replication and Prediction Study: From the eyes of an analysis team; Annual Meeting of the Organization for Human Brain Mapping; Virtual; June 2020
- Laminar profiles dissociate attentional and crossmodal influences in sensory cortices; Brain in Depth; Magdeburg, Germany; 31st May 2018

- [Implication du groupe sérotoninergique B3 dans le contrôle des circuits de la douleur et des réactions neurovégétatives associées](#); 10th congress of the French society for the study and treatment of pain; Marseille, France; 18th November 2010

Invited talks

- BIDS: underlying data management principles [Open Science Office Hours](#), The Neuro, Montréal, Québec, Canada; 4th October 2023 
- BIDS: underlying data management principles [Center for Research in Neuroscience in Lyon](#), France; 2nd October 2023
- BIDS: underlying data management principles Ghent University, Belgium; 19th January 2023
- The BIDS Statistical Model and some of its implementation INRIA, Rennes, France; 21st November 2022
- [The BIDS Statistical Model](#); Institut des neurosciences de la Timone, Marseille, France; 10th November 2022
- [BIDS: underlying data management principles](#); Open Research at the Wellcome Centre for Integrative Neuroimaging (WIN); Virtual; 17th January 2022 
- [BIDS: a cookbook](#); ACCS and OHBM Webinar and Workshop Series; Virtual; 12th October 2021 
- [New Trends in Open Science: Code and Data Sharing](#); BAPS 2021 - Junior day; Virtual; 27th May 2021 
- [eCobidas: because methods writing is too important \(and boring\) to let humans do it!](#); Repronim webinars; Virtual; 8th January 2021 
- [Things I wish I knew when I started coding](#); Brainhack Ankara; Virtual; 12th December 2020 
- [The Brain Imaging Data Structure \(BIDS\) as an example of data organization](#); Louvain bionics, Université Catholique de Louvain, Belgium; Virtual; 9th October 2020 

Internal talks

- [Datalad crash course](#); internal workshop to help the lab transition to datalad; 24th February 2022
- [More brain droppings on the replication crisis in psychology](#); talk given at a brown bag meeting at the department of psychology of the université Catholique de Louvain la Neuve; 11th April 2019
- [Brain droppings on the replication crisis in psychology](#); talk given at the post-graduate seminar of the School of Psychology at the University of Birmingham (UK); 24th November 2016

posters

- **Gau R**, Barilari M, Battal C, Caron-Guyon J, Cerpelloni F, Falagiarda F, Maclean M, Mattioni S, Rezk M, Shahzad I, Yang Y, Collignon O [Bidspm: an spm-centric bids app for flexible statistical analysis](#), Annual Meeting of the Organization for Human Brain Mapping, Montréal, Québec, (Canada), 2023;
- Cerpelloni F, Van Audenhaege A, Battal C, **Gau R**, Falagiarda F, Op de Beeck H, Collignon O [The visual word form area engages in processing Braille in expert visual readers](#), Vision Sciences

Society Annual Meeting, 2023;

- **Gau R**, Abraham SA, Gould van Praag C, Sjoerds Z, Wiebels K, Moreau D, Ghosh S, Nichols TE; [eCOBIDAS: a webapp checklist to improve neuroimaging methods and results reporting](#), Annual Meeting of the Organization for Human Brain Mapping, Virtual, 2020;
- **Gau R**, Trampel R, Bazin PL, Turner R, Noppeney U; Layer-specific attentional modulation and multisensory interactions in sensory cortices, Annual Meeting of the Organization for Human Brain Mapping, Geneva (Switzerland), 2016; doi:[10.13140/RG.2.2.32219.57124](#)
- **Gau R**, Trampel R, Bazin PL, Turner R, Noppeney U; Effect of sensory modality and attention on layer-specific activations in sensory cortices, Annual Meeting of the Organization for Human Brain Mapping, Hamburg (Germany), 2014; doi:[10.13140/RG.2.2.18797.79846](#)
- **Gau R**, Noppeney U; The left prefrontal cortex controls information integration by combining bottom-up inputs and top-down predictions, Annual meeting of the Society for neurosciences, San Diego, (California, USA), 2013; doi:[10.13140/RG.2.2.12086.91207](#)
- Bernard JF, Sevoz-Couche C, Hamon M, **Gau R**; Responses of lateral paragigantocellular and raphe magnus serotonergic neurons to noxious stimuli: a comparative reappraisal using juxta-cellular recording, 13th world congress on pain; International association for the study of pain; Montréal (Québec, Canada), 2010
- Bernard JF, Sevoz-Couche C, Hamon M, **Gau R**; [Involvement of lateral paragigantocellular reticular serotonergic and non-serotonergic neurons in nociceptive processes](#), Annual meeting of the Society for neurosciences, Chicago, (Illinois, USA), 2009
- **Gau R**, Sevoz-Couche C, Hamon M, Laguzzi R, Bernard JF; [Inhibition of cardiac baroreflex by intense noxious stimuli: a serotonergic mechanism involving the lateral paragigantocellular reticular nuclei](#); Annual meeting of the Society for neurosciences, Washington (D.C., USA), 2008
- Bernard JF, Sevoz-Couche C, Hamon M, Laguzzi R, **Gau R**; [Critical role of the B3 group in the baroreflex inhibition evoked by thermal noxious stimulation in the rat](#), Annual meeting of the Society for neurosciences, San Diego (California, USA), 2007
- Bernard JF, Netzer F, **Gau R**, Hamon M, Laguzzi R, Sevoz-Couche C; Serotonergic neurons of B3 group: critical role in baroreflex inhibition during the defense reaction in the rat; Annual meeting of the Society for neurosciences, Atlanta (Georgia, USA), 2006




















OPEN-SCIENCE

Contributions to Open Source Scientific Projects

- **Nilearn**: maintenance and development of [Nilearn](#)
- **Brain Imaging Data Structure**: organizing neuroimaging data to facilitate analysis and sharing.

Help with the maintenance of the:

- [specification](#)
- [starter-kit](#)
- [website](#)
- [statistical model](#)
- [youtube channel](#)

- [podcast](#)
- **Maintainer of the following tools:**
 - **bidspm**   SPM centric BIDS app 
 - **bids-matlab**   Library to work with BIDS datasets 
 - **bids2cite**  Creating a citation files for a BIDS dataset 
 - **bidsMReye**  BIDS app to decode eye motion for fMRI time series data 
 - **eCobidas**   [webapp](#) to facilitate methods reporting in neuroimaging 
 - **Octache**   Implementation of the [mustache templating language](#) 
 - **clean matlab**   "clean code" template for MATLAB and Octave projects 

Hackathon projects

- **eCobidas:**
 - Brainhack Global Marseille 2021 (virtual) 
 - Brainhack Global Donostia 2021 (virtual) 
 - OpenMR Benelux 2020 (Rome, Nijmegen) 
 - OHBM 2019 hackathon (Rome, Italy) 
- **pre-registration template for MRI and M/EEG research:**
 - SIPS 2019 (Rotterdam, Netherlands)

PROFESSIONAL ACTIVITIES

Organizing

- **Brainhack global 2023:** *Virtual-Hybrid*; Nov–Dec 2023; Role: wesbite maintenance 
- **Brainhack global 2022:** *Virtual-Hybrid*; Nov–Dec 2022; Role: wesbite maintenance 
- **Brainhack global 2021:** *Virtual-Hybrid*; Nov–Dec 2021; Role: coordination team 
- **openMR benelux 2021:** *Virtual*; 8–14 Jul 2020; Role: organizing team 
- **OHBM 2020 hackathon:** *Virtual*; 16-18 June 2020; Role: co-chair  
- **openMR benelux 2020:** *Donders Institute, Nijmegen, Netherlands*; 21-23 January 2020; Role: organizing team  

Peer review

Journals

- Journal of Experimental Neuroscience
- Plos One

- European Journal of Neuroscience
- Frontiers in Neuroinformatics
- Journal of Neuroscience Research


Conferences

- Proceedings of the Annual Conference of the Cognitive Science Society


Internal

- 2021-current: Data ambassador of the institute of psychology of the Université Catholique de Louvain
- 2017: Co-organizer of the Eif Journal Club on methodology and replicability in psychology at the University of Birmingham (UK)






Scientific Societies

- **Organization for Human Brain Mapping:**
 - 2020-current: [Best Practices Committee](#)
 - 2019-2020: [Open Science Special Interest Group](#) 
- **International Neuroinformatics Coordination Facility:**
- **Society for the improvement of psychological science:**
- **Society for Neuroscience:**

Outreach

- [Parapsychologie et crise de la réplication](#); Presentation given for the Skeptics in the Pub of Brussels (Belgium); 15th February 2020 
- 2019-present: active member of the Comité belge pour l'analyse critique des parasciences
- [Our brain, our senses, and us](#); Interactive presentation given at the children section of the Skeptics in the Pub of Gravesend (UK); 20th October 2015

TEACHING

- **February 2023**: Clean code workshop for MATLAB
- **September 2022**: BIDS workshop for the Ruhr Universität Bochum 
- **November 2019**: Co-organizer and instructor at the first neuroimaging workshop at the University Catholique de Louvain (Belgium)  
- **June 2019**: Mini-lab leader for the workshop *Empirical Methods in Cognitive Linguistics 8* at the University of Tartu (Estonia) 
- **2013 to 2016**: Teaching assistant for the *Advanced Brain Imaging* masters course at the University of Birmingham (UK) 
- **2009**: Teaching assistant for the *Human Evolution* class of the preparatory program to paramed-

ical training at the University Pierre et Marie Curie (Paris, France)

- **2005:** Teaching assistant for the *Psychophysiology* undergraduate class of the psychology program of the University Mirail-Toulouse II (France)

RESEARCH AND TECHNICAL SKILLS

- **Information technology:**

Program	Area	Knowledge
Matlab	Programming	Excellent
SPM	Neuroimaging analysis	Excellent
PsychToolBox	Stimulus presentation	Excellent
Presentation	Stimulus presentation	Excellent
Git/GitHub	Version control / CI-CD	Excellent
Datalad	Data version control	Excellent
Python	Programming	Excellent
sphinx	Technical writing	Excellent
mkdocs	Technical writing	Excellent
jekyll, hugo	Static website	Excellent
bash	Programming	Good
nighres	High-field neuroimaging analysis	Good
L ^A T _E X	Document production	Good
Spike 2	Physiological data recordings	Basic
HTML, CSS	Web-design	Basic
Palamedes	Psychophysics data analysis	Basic
LIBSVM	Multivariate pattern analysis	Basic
cvMANOVA	Multivariate pattern analysis	Basic
Freesurfer	Neuroimaging analysis	Basic
FSL	Neuroimaging analysis	Basic
Pronto	Multivariate pattern analysis	Basic
TDT	Multivariate pattern analysis	Basic
SPSS	Statistical analysis	Basic

- **Human neuroimaging:** design, implementation and analysis of structural and functional MRI studies, fMRI design efficiency optimization, preprocessing, mass univariate and multivariate pattern analysis, high-field structural and functional MRI analyses
- **Cognitive neuroscience:** design, implementation and analysis of psychophysics and eyetracking studies of multi-sensory integration
- **Functional neuroanatomy:** direct online physiological parameters recording and analysis, use of neuroanatomical tracers (Phaseolus, TMR, fluorogold), functional c-fos expression experiments, stereotaxic local pharmacological neuroinactivation.
- **Electrophysiology:** *In vivo* extracellular recording combined to juxtacellular labeling in

halothane anesthetized rats, LTP protocols and associated pharmacological modulation on rat brain slices using intracellular recording in current clamp or extracellular recording with a multi-electrodes array.

- **Microscopy & histology:** Total animal fixation with formalin & brain extraction, general histological techniques (Cresyl violet, thionin), double immunohistochemical and immunofluorescent labeling, epifluorescent transmission and confocal microscope images acquisition and processing.

GRANTS

- **2009-2010:** Award from the French society for the study and treatment of pain
- **2006-2009:** Scholarship from the French ministry of research and technology