

Chris Gorgolewski

Research Associate at Stanford University

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Research Interests

I am interested in we can use modern technology to improve the way we study human behaviour and its neuronal underpinnings. This involves building tools and services (such as Nipype and NeuroVault.org) that allow neuroscientists and psychologists to be more efficient and less biased in the way they collect and analyze data. I'm also involved efforts to maximise the impact of behavioural and brain research through data sharing. This work goes beyond tools and services and includes policy making and publishing culture research.

Postdoctoral Work Experience

- 2015 –** **Stanford University, Stanford, USA**
Research Associate
Russell Poldrack Lab, Department of Psychology
- 2014 – 2015** **Stanford University, Stanford, USA**
Postdoctoral Research Fellow
Russell Poldrack Lab, Department of Psychology
- 2012 – 2014** **Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany**
Postdoctoral Research Fellow
Neuroanatomy and Connectivity Research Group

Education

- 2009 – 2012** **University of Edinburgh, UK**
PhD in Neuroimaging Methods
Thesis topic "Using probabilistic models of white and grey matter activation for presurgical planning of tumour extraction", supervisors: Mark Bastin, Cyril Pernet, and Amos Storkey.
- 2010** **Harvard University, Cambridge, USA**
Visiting Research Fellow
Work at at Surgical Planning Laboratory. Collaboration with Dr Alex Golby (Harvard) and Dr Satrajit Ghosh (MIT).
- 2008 – 2009** **University of Edinburgh, UK**
MRes with Distinction in Neuroinformatics
Thesis topic: "Noise Contributions to Functional Diffusion Tensor Imaging", supervisor: Mark Bastin
- 2004 – 2008** **Poznan University of Technology, Poland**
BSc in Computer Science
Graduated with grade A (excellent), **merit-based scholarship**

Publications

Journal Articles and selected conference papers

Pernet, C. R., McAleer, P., Latinus, M., **Gorgolewski, K. J.**, Charest, I., Bestelmeyer, P. E. G., Watson, R. H., et al. (2015). The human voice areas: Spatial organization and inter-individual variability in temporal and extra-temporal cortices. *NeuroImage*, 119, 164–174.

Poldrack, R. A., & **Gorgolewski, K. J.** (2015). OpenfMRI: Open sharing of task fMRI data. *NeuroImage*.

Shine, J. M., Oluwasanmi, K., Bell, P. T., **Gorgolewski, K. J.**, Gilat, M., & Poldrack, R. A. (2015). Estimation of dynamic functional connectivity using Multiplicative Analytical Coupling. *NeuroImage*.

Gorgolewski, K. J., Varoquaux, G., Rivera, G., Schwartz, Y., Sochat, V. V., Ghosh, S. S., Maumet, C., et al. (2015). *NeuroVault.org: A repository for sharing unthresholded statistical maps, parcellations, and atlases of the human brain.* *NeuroImage*.

Gorgolewski, K. J., Varoquaux, G., Rivera, G., Schwarz, Y., Ghosh, S. S., Maumet, C., Sochat, V. V., et al. (2015). *NeuroVault.org: a web-based repository for collecting and sharing unthresholded statistical maps of the human brain.* *Frontiers in neuroinformatics*, 9. *Frontiers*.

Gorgolewski, K. J., Mendes, N., Wilfling, D., Wladimirow, E., Gauthier, C., Bonnen, T., Ruby, F. J. M., et al. (2015). A high resolution 7-Tesla resting-state fMRI test-retest dataset with cognitive and physiological measures. *Scientific Data*. [OA]

Zuo, X-N., Anderson, J., Pierre Bellec, P., Birn, B., Biswal, B., Blautzik, J., Breitner, J., Buckner, R., Calhoun, V., Castellanos, F., Chen, A., Chen, B., Chen, J., Chen, X., Colcombe, S., Courtney, W., Craddock, C., Di Martino, A., Dong, H-M., Fu, X., Gong, Q., **Gorgolewski, K. J., et al. (2014).** An Open Science Resource for Establishing Reliability and Reproducibility in Functional Connectomics. *Scientific Data*. [OA]

Poldrack, R. A. and **Gorgolewski, K. J. (2014)** Making big data open: Data sharing in neuroimaging. 17(11), 1510–1517. *Nature Neuroscience* [OA]*

Gorgolewski, K. J., Lurie, D., Urchs, S., Kipping, J. A., Craddock, R. C., Milham, M. P., Margulies, D. S., et al. (2014). A correspondence between individual differences in the brain's intrinsic functional architecture and the content and form of self-generated thoughts. *PloS one*, 9(5), e97176. [OA]

Schaefer, A., Margulies, D. S., Lohmann, G., **Gorgolewski, K. J., Smallwood, J., Kiebel, S. J., & Villringer, A. (2014).** Dynamic network participation of functional connectivity hubs assessed by resting-state fMRI. *Frontiers in human neuroscience*, 8, 195. [OA]

Gorgolewski, K. J., Storkey, A. J., Bastin, M. E., Whittle, I., & Pernet, C. (2013). Single subject fMRI test-retest reliability metrics and confounding factors. *NeuroImage*, 69, 231–243. [OA]*

Baird, B., Smallwood, J., **Gorgolewski, K. J., & Margulies, D. S. (2013).** Medial and Lateral Networks in Anterior Prefrontal Cortex Support Metacognitive Ability for Memory and Perception. *Journal of Neuroscience*, 33(42), 16657–16665. [OA]*

Margulies, D. S., Böttger, J., Watanabe, A., & **Gorgolewski, K. J. (2013).** Visualizing the human connectome. *NeuroImage*, 80, 445–461. Elsevier B.V. [OA]*

Gorgolewski, K. J., Margulies, D. S., & Milham, M. P. (2013). Making Data Sharing Count: A Publication-Based Solution. *Frontiers in brain imaging methods*, 7. *Frontiers in human neuroscience* [OA]

Gorgolewski, K. J., Bazin, P.-L., Engen, H., & Margulies, D. S. (2013). Fifty Shades of Gray, Matter: Using Bayesian priors to improve the power of whole-brain voxel- and connexelwise inferences. *Pattern Recognition in NeuroImaging (PRNI), 2013 International Workshop on*. [OA]

Smallwood, J., **Gorgolewski, K. J., Golchert, J., Ruby, F. J. M., Engen, H., Baird, B., Vinski, M. T., et al. (2013).** The default modes of reading: modulation of posterior cingulate and medial prefrontal cortex connectivity associated with comprehension and task focus while reading. *Frontiers in human neuroscience*, 7(November), 1–10. [OA]

Gorgolewski, K. J., Storkey, A., Bastin, M. E., Whittle, I. R., Wardlaw, J. M., & Pernet, C. R. (2013). A test-retest fMRI dataset for motor, language and spatial attention functions. *GigaScience*, 2(1), 6. [OA]

Buchanan, C. R., Pernet, C. R., **Gorgolewski, K. J., Storkey, A. J., & Bastin, M. E. (2013).** Test-retest reliability of structural brain networks from diffusion MRI. *NeuroImage*. [OA]*

Poline, J.-B., Breeze, J. L., Ghosh, S., **Gorgolewski, K. J., Halchenko, Y. O., Hanke, M., Haselgrove, C., et al. (2012).** Data sharing in neuroimaging research. *Frontiers in human neuroscience*, 6(April), 1–13. [OA]

Gorgolewski, K. J., Storkey, A. J., Bastin, M. E., & Pernet, C. R. (2012). Adaptive thresholding for reliable topological inference in single subject fMRI analysis. *Frontiers in human neuroscience*, 6, 1–14. [OA]

Gorgolewski, K. J., Burns, C. D., Madison, C., Clark, D., Halchenko, Y. O., Waskom, M. L., & Ghosh, S. S. (2011). Nipype: A Flexible, Lightweight and Extensible Neuroimaging Data Processing Framework in Python. *Frontiers in neuroinformatics*, 5(August). [OA]

Grants and awards

- OHBM Abstract Merit award, 2015
- INCF Special Grant for development of NeuroVault.org, 2014
- OHBM Travel Award, 2013
- ISMRM Educational Stipend, 2011
- Edinburgh Neuroscience Neuroresearcher Fund, 2011

* Manuscripts available in Mendeley and ResearchGate repositories.

- Neuroinformatics and Computational Neuroscience Doctoral Training Centre Fellowship, 2008-2012

Invited talks

- *Data sharing in neuroimaging: incentives, tools, and challenges*. February 2015, Albuquerque
- *Some neuroinformatics tools for data sharing and reproducibility*. December 2014, Berkeley
- *NeuroVault and the vision for data sharing in neuroimaging*. January 2014, London
- *Data processing for MRI resting state*. September 2013, York
- *Data processing using Nipype – beginners workshop*. May 2013, Trento
- *Nipype Connectivity Workshop*. September 2012, Magdeburg
- *Using fMRI for presurgical planning: advancements in statistical methods*. May 2012 Leipzig
- *Data processing using Nipype*. April 2012, Iowa City
- *Data processing using Nipype*. April 2012, Munich

Teaching experience

- Invited Lecturer: Berkeley neuroimaging class (2014)
- Lecturer: Introduction to Research Computing, 2010-2011
- Teaching Assistant: Data Mining and Exploration, 2009-2011
- Tutor: Processing Natural and Formal Languages (2009-2010), Introduction to Applied Machine Learning (2009-2010), Machine Learning and Pattern Recognition (2010-2011)
- Supervision of numerous interns and masters students.

Other experience

- **INCF Data Sharing Task Force**
Active member since 2010.
- **Neuroimaging Data Processing Workshop, Edinburgh 2010**
Organized a two day INCF founded workshop with international speakers for 30 participants.
- **IDEA Sequence Development course, Boston 2010**
Five day long Siemens MRI sequence programming course.
- **Leading developer of Nipype data processing software**
Actively involved in development and user support since 2009.
- **Software Developer Engineer at Microsoft**
Summer 2008 internship with Content Access Protection team - Redmond, WA, USA.

Skills

- Neuroimaging: paradigm design (Presentation and OpenSesame) and analysis of fMRI, DTI, T1, T2 data using SPM, FSL, Freesurfer, Diffusion Toolkit, MRTrx, and Nipy
- Software development: C, C++, C#, Java, Python, Django, MATLAB, Git, and SVN
- System administration: Linux
- Statistics and machine learning: R, SPSS, sklearn