

gregorykiar

Research Scientist, Child Mind Institute

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education

- 2017 – 2021 **Ph.D.** in Biomedical Engineering McGill University, Montreal, QC
Thesis work supervised by Alan Evans and Tristan Glatard on a project entitled:
This is Your Brain on Disk: The Impact of Numerical Instabilities in Neuroscience. Project involved the development of high performance computing infrastructures, the instrumentation and perturbation of neuroimaging pipelines, the evaluation of these perturbations in an analytic context, and the application of perturbed derivatives towards data augmentation in machine learning applications. All code and data have been made publicly available.
- 2014 – 2016 **M.S.E** in Biomedical Engineering Johns Hopkins University, Baltimore, MD
Thesis work was supervised by Joshua T. Vogelstein on a project entitled:
GREMLIN: Graph Estimation from MR images Leading to Inference in Neuroscience. All code and data have been made publicly available.
- 2010 – 2014 **B.Eng** in Biomedical and Electrical Engineering Carleton University, Ottawa, ON
Capstone work was supervised by Leonard MacEachern on a project entitled:
Electrical muscle stimulation with concurrent EMG feedback of the upper arm for applications in stroke rehabilitation.
- 2018 **Software and Data Carpentry Instructor Training** Compute Canada, Toronto, ON
Running workshops in the context of an evidence-based instructional pedagogy.
- 2016 **Exploring the Human Connectome** The Human Connectome Project, Boston, MA
Development and deployment of connectome estimation pipelines.
- 2015 **Presenting Data and Information** Edward Tufte, Baltimore, MD
Cultivate skills in effective communication with scientific figures.

experience

Research Experience

- 04/21 – now **Child Mind Institute — Computational Neuroimaging Laboratory** New York City, NY
Research Scientist
Leads software development and research teams within the Computational Neuroimaging Laboratory to produce tools and resources that support neuroscience through high performance computing, the application of computational statistics, and machine learning. Develops and executes research programs, obtains funding, and communicates scholarly outputs. Research projects involve evaluating and improving the trustworthiness of tools and techniques used to study the brain to inform decision making surrounding robust data collection, image processing, and ultimately biomarker discovery.
- 05/17 – 04/21 **McGill University — McGill Centre for Integrative Neuroscience** Montreal, QC
Software Developer & Researcher
Responsible for the exploration and integration of distributed software services with high performance computing clouds and clusters, providing development, training, and support towards the use of tools and services within international collaborations. Focused on the development of methods for evaluating the trustworthiness and stability of neuroimaging tools and experiments.
- 04/19 – 07/19 **Empenn — Inria Rennes, Bretagne Atlantique** Rennes, France
Research Intern
Developed web crawler to scrape public neuroimaging databases for processed functional activation maps. Constructed workflow for metadata-based QC at scale with 10,000s of samples. Designed a convolutional neural network for the identification of consensus activation maps across populations.

- 09/14 – 05/17 **Johns Hopkins University — Center for Imaging Science** Baltimore, MD
Research Engineer
 Development and maintenance of an open-source pipeline for structural connectome estimation in humans and implemented statistical algorithms for quality control of data derivatives. Publicly released data products to lower the barrier to entry for neuroscience research. Chiefly responsible for grant reporting and public presence at conferences and workshops.
- 06/13 – 09/13 **Carleton University — Dept. of Systems and Computer Engineering** Ottawa, ON
Research Assistant with Dr. Rafik Goubran
 Developed wireless medical data publish-subscribe system for viewing patient vital signs remotely.
- 06/12 – 09/12 **Carleton University — Dept. of Systems and Computer Engineering** Ottawa, ON
Research Assistant with Dr. Andy Adler
 Utilized neural networks for inverse modeling of real and simulated biological systems.
- 06/11 – 09/11 **Carleton University — Dept. of Biology** Ottawa, ON
Research Assistant with Dr. Jeffrey Dawson
 Developed robotics platform for studying insect locomotion patterns and behaviour.
- 01/09 – 09/09 **Ottawa Hospital Research Institute — Cancer Research Center** Ottawa, ON
Research Assistant with Dr. Jim Dimitroulakos
 Tested combination therapies of Lovastatin and Cisplatin drugs on colon and breast cancer strains.

Teaching Experience

- 01/19 – 01/20 **Concordia Continuing Education** Montreal, QC
Instructor & Curriculum Developer
 Responsible for the training of working professionals in the basics of "Big Data Technology," including fundamental tools for software development such as Unix, Git, and Docker, and software for numerical analysis such as Python and R. Core contributor in the development of new courses within the "Big Data Solutions for Business" diploma program.
- 05/17 – 05/21 **McGill University, OHBM, Brainhack School, Brain Intensive, others** Montreal, QC
Neuroinformatics Instructor
 Regularly plan and teach a series of workshop introducing neuroscientists and trainees to methods in neuroinformatics. Developed and publicly released all course content on GitHub under the "Brainhack101" moniker and several videos on YouTube under the "BrainIntensive" profile.
- 09/14 – 05/17 **Dept. of Biomedical Engineering, Johns Hopkins University** Baltimore, MD
Teaching Assistant
 Responsible for instruction, evaluation, and content design for: Freshman Modeling and Design for BME (2014, 2015), Systems and Controls (2015), Statistical Connectomics (2015), The Art of Data Science (2016), NeuroData Design (2016). Spent more than 500 hours working with students.
- 01/{15, 16, 17} **Dept. of Computer Science, Johns Hopkins University** Baltimore, MD
Instructor
 Responsible for instruction, evaluation, and content design for intensive 3-week project-based course on an introduction to connectomics research across multiple scales and experimental modalities. Spent more than 300 hours planning, designing course content, and working with students.
- 09/12 – 05/14 **Student Academic Success Center, Carleton University** Ottawa, ON
Facilitator for Peer-Assisted Study Sessions
 Instructed and demonstrated mastery of principles in electromagnetism and power engineering. Spent more than 300 hours working with students.
- 08/13 – 05/14 **Student Academic Success Center, Carleton University** Ottawa, ON
Facilitator Team Leader
 Provided training, mentoring, and coaching to student instructors in a variety of disciplines. Spent more than 100 hours training and working with facilitators.

01/13 – 06/14 **Dept. of Systems and Computer Engineering, Carleton University** Ottawa, ON
Teaching Assistant
 Instructed introductory level C++ programming. Led lab sessions and instructional workshops. Spent more than 300 hours working with students.

grants & awards

grants

2022 – 2025	NIH NIMH, 1RF1MH130859 PI: Gregory Kiar Improving the robustness of neuroimaging through exploitation of variability in processing pipelines	Awarded Amount: \$1,504,004.00
2022 – 2023	NSF XSEDE, MED220009 PI: Gregory Kiar Preprocessing and sharing of large-scale open neuroimaging datasets	Awarded Amount: \$117,077.80
2022 – 2023	NSF XSEDE, BIO220056 Role: Co-Investigator PI: Ting Xu Mapping Large-scale Brain Development between Human and Nonhuman Primate	Awarded Amount: \$30,786.95
2021 – 2023	Michael J. Fox Foundation Role: Consultant PI: Tristan Glatard Improving the generalizability and robustness of MRI-derived biomarker of Parkinson's Disease through analytical and data variability evaluations	Awarded Amount: \$305,254.00
2021 – 2022	NSF XSEDE, CIS210056 PI: Gregory Kiar Application of uncertainty quantification for neuroimaging software design, testing, and analysis	Awarded Amount: \$880.00
2018 – 2021	NSERC Canada, CGSD3-519497-2018 PI: Gregory Kiar Supporting scalable computing in neuroimaging for the exploration of numerical instabilities and their impact	Awarded Amount: \$105,000.00

awards

2020	Research Scholar Award	Canadian Open Neuroscience Platform, Montreal, QC
2019	Young Investigator Award	Sage Bionetworks, Seattle, WA
2019	Instructor Training Fellowship	Repronim, Worcester, MA
2019	Globalink Research Award	Mitacs, Montreal, QC
2018	Michael Smith Foreign Study Supplement	NSERC, Ottawa, ON
2017	Healthy Brains for Healthy Lives Doctoral Fellowship	McGill University, Montreal, QC
2017	CRN Coding Sprint Project Award	Stanford University, Palo Alto, CA
2017	OHBM BrainHack Travel Award	OHBM, Minneapolis, MN
2014 – 2016	Full-tuition Master's Degree Fellowship	Johns Hopkins University, Baltimore, MD
2014	Graduated with Distinction	Carleton University, Ottawa, ON
2014	Greatest Social Impact Paper	Professional Engineering Ontario (PEO), Ottawa, ON
2014	SEED Fund	Carleton University Engineering Alumni, Ottawa, ON
2014	IEEE Papers Showcase Local Winner	IEEE Ottawa-Carleton Chapter, Ottawa, ON
2014	Carleton Electronics Project Competition Champion	Carleton University, Ottawa, ON
2013	Engineering '65 and '66 Scholarship	Carleton University, Ottawa, ON
2012	Clarence C. Gibson Scholarship	Carleton University, Ottawa, ON

supervision & academic mentorship

1. Nathalia Bianchini Esper (Postdoctoral Fellow, Child Mind Institute; 2022-)
2. Elizabeth Kenneally (Software Developer, Child Mind Institute; 2022-)
3. Connor Lane (Software Developer, Child Mind Institute; 2022-)
4. Maya Roberts (Research Assistant, Child Mind Institute; 2022-)
5. Florian Rupprecht (Software Developer, Child Mind Institute; 2022-)
6. Amy Gutierrez (Software Developer, Child Mind Institute; 2021-)
7. Teresa George (Software Developer, Child Mind Institute; 2021-)
8. Jon Clucas (Software Developer, Child Mind Institute; 2021-)
9. Xinhui Li (Software Developer, Child Mind Institute; 2021-)
10. Ali Salari (PhD in Computer Science, Concordia University; with Tristan Glatard; 2019-2022)
11. Hamidreza Heidarzadeh (MSc in Computer Science, Concordia University; with Tristan Glatard; 2018-2019)

memberships & extracurriculars

2017 – now	Various Neuroinformatics-based Hackathons and Courses Hackathon Chair, Organizer, & Instructor	Montreal, QC
2020 – 2022	XSEDE, NSF XSEDE Review Allocation Committee Member	Alexandria, VA
2020	COVID-19 HPC Consortium Review Allocation Committee Member	Global
2017 – 2020	Canadian Open Neuroscience Platform Training Committee Trainee Representative	Montreal, QC
2017 – 2020	OHBM Open Science SIG Treasurer, Educational Committee Liaison	Minneapolis, MN
2018 – 2019	Ludmer Centre Seeds of Change Campaign Trainee Ambassador	Montreal, QC
2017 – 2018	OHBM Open Science SIG Hackathon Chair	Minneapolis, MN
2017 – 2018	Healthy Brains for Healthy Lives Trainee Committee President (Neuroinformatics)	Montreal, QC
2015 – 2017	College Prep Program College Mentor, SAT Coach, & Essay Reviewer	Baltimore, MD
2014 – 2016	Thread Volunteer supervisor & student mentor	Baltimore, MD
2013 – 2014	Carleton University Biomedical Engineering Society President	Ottawa, ON
2010 – 2011	Carleton University Student Emergency Response Team Emergency First Responder	Ottawa, ON

reviewed for

1. Aperture (Organization for Human Brain Mapping)
2. COVID-19 High Performance Computing Consortium (NSF)

3. Biological Psychiatry (Elsevier)
4. Cluster Computing (Springer)
5. Extreme Science and Engineering Discovery Environment (NSF)
6. Frontiers in Neuroinformatics (Frontiers)
7. Gigascience (Oxford University Press)
8. Journal of Open Source Software
9. Medical Image Analysis (Elsevier)
10. Nature Communications Biology (Nature Publishing)
11. Nature Scientific Data (Nature Publishing)
12. Neuroimage (Elsevier)
13. Practice & Experience in Advanced Research Computing Conference (NSF)
14. Scipy Conference

publications

pre-prints

1. A Guide for Quantifying and Optimizing Measurement Reliability for the Study of Individual Differences
Ting Xu, JaeWook Cho, Gregory Kiar, Eric W Bridgeford, Joshua T Vogelstein, Michael P Milham
bioRxiv (2022). Cold Spring Harbor Laboratory.
2. Batch Effects are Causal Effects: Applications in Human Connectomics
Eric W Bridgeford, Michael Powell, Gregory Kiar, Ross Lawrence, Brian Caffo, Michael Milham, Joshua T Vogelstein
bioRxiv (2021). Cold Spring Harbor Laboratory.
3. Moving Beyond Processing and Analysis-Related Variation in Neuroscience
X. Li, L. Ai, S. Giavasis, ... **G. Kiar**, M. P. Milham
bioRxiv (2021). Cold Spring Harbor Laboratory.

articles in peer-reviewed journals

1. An analysis-ready and quality controlled resource for pediatric brain white-matter research
A. Richie-Halford, M. Cieslak, L. Ai, S. Caffarra, S. Covitz, A. R. Franco, ... **G. Kiar**, ... T. D. Satterthwaite, A. Rokem
Scientific Data (2022). Nature Publishing Group.
2. PyTracer: Automatically profiling numerical instabilities in Python
Y. Chatelain, N. Yong, **G. Kiar**, T. Glatard
IEEE Transactions on Computers (Nov. 2022). IEEE.
3. Toward next-generation primate neuroscience: A collaboration-based strategic plan for integrative neuroimaging
M. P. Milham, C. Petkov, P. Belin, ... **G. Kiar**, ...
Neuron (2021). Elsevier.
4. Evaluating the reliability of human brain white matter tractometry
J. Kruper, J. D. Yeatman, A. Richie-Halford, D. Bloom, M. Grotheer, S. Caffarra, **G. Kiar**, I. I. Karipidis, E. Roy, B. Q. Chandio
Aperture (2021). Organization for Human Brain Mapping.

5. Data Augmentation Through Monte Carlo Arithmetic Leads to More Generalizable Classification in Connectomics
G. Kiar, Y. Chatelain, A. Salari, A. C. Evans, T. Glatard
Neurons, Behavior, Data Analysis, and Theory (2021).
6. Numerical Instabilities in Analytical Pipelines Lead to Large and Meaningful Variability in Brain Networks
G. Kiar, Y. Chatelain, P. Oliveira Castro, E. Petit, A. Rokem, G. Varoquaux, B. Misisic, A. C. Evans, T. Glatard
PLOS One (Sept. 2021). Public Library of Science.
7. Eliminating accidental deviations to minimize generalization error: applications in connectomics and genomics
E. W. Bridgeford, S. Wang, Z. Yang, Z. Wang, T. Xu, C. Craddock, J. Dey, **G. Kiar**, W. .R. Gray-Roncal, C. Coulantoni
PLOS Computational Biology (Sept. 2021). Public Library of Science.
8. Centering inclusivity in the design of online conferences—An OHBM–Open Science perspective
E. Levitis, C. D. G. Praag, R. Gau, S. Heunis, E. DuPre, **G. Kiar**, K. L. Bottenhorn, T. Glatard, A. Nikolaidis, K. J. Whitaker
GigaScience 10.8 (Aug. 2021) giab051. Oxford University Press.
9. Brainhack: Developing a culture of open, inclusive, community-driven neuroscience
R. Gau, S. Noble, K. Heuer, K. L. Bottenhorn, ... **G. Kiar**
Neuron (June 2021). Elsevier.
10. Comparing perturbation models for evaluating stability of neuroimaging pipelines
G. Kiar, P. de Oliveira Castro, P. Rioux, E. Petit, S. T. Brown, A. C. Evans, T. Glatard
The International Journal of High Performance Computing Applications (2020) p. 109434202092623.
11. A quantitative EEG toolbox for the MNI Neuroinformatics ecosystem: normative SPM of EEG source spectra
J. Bosch-Bayard, E. Aubert-Vazquez, S. T. Brown, C. Rogers, **G. Kiar**, T. Glatard, L. Scaria, L. Galan-Garcia, M. L. Bringas-Vega, T. Virues-Alba
Frontiers in Neuroinformatics 14 (2020). Frontiers Media SA.
12. File-based localization of numerical perturbations in data analysis pipelines
A. Salari, **G. Kiar**, L. Lewis, A. C. Evans, T. Glatard
GigaScience 9.12 (Dec. 2020) giab106. Oxford University Press.
13. Neural correlates of polygenic risk score for autism spectrum disorders in general population
B. Khundrakpam, U. Vainik, J. Gong, N. Al-Sharif, N. Bhutani, **G. Kiar**, Y. Zeighami, M. Kirschner, C. Luo, A. Dagher, A. C. Evans
Brain Communications (July 2020). fcaa092.
14. Brain status modeling with non-negative projective dictionary learning
M. Zhang, C. Desrosiers, Y. Guo, B. Khundrakpam, N. Al-Sharif, **G. Kiar**, P. Valdes-Sosa, J. B. Poline, A. C. Evans
Neuroimage (Oct. 2019) p. 116226.
15. PyBIDS: Python tools for BIDS datasets
T. Yarkoni, C. Markiewicz, A. Vega, K. Gorgolewski, T. Salo, Y. Halchenko, Q. McNamara, K. DeStasio, J. B. Poline, D. Petrov, V. Hayot-Sasson, D. Nielson, J. Carlin, **G. Kiar**, K. Whitaker, E. DuPre, A. Wagner, L. Tirrell, M. Jas, M. Hanke, R. Poldrack, O. Esteban, S. Appelhoff, C. Holdgraf, I. Staden, B. Thirion, D. Kleinschmidt, J. Lee, M. Castello, M. Notter, R. Blair
JOSS 4.40 (Aug. 2019) p. 1294.
16. A Serverless Tool for Platform Agnostic Computational Experiment Management
G. Kiar, S. T. Brown, T. Glatard, A. C. Evans
Frontiers in Neuroinformatics 13 (Mar. 2019) p. 12.
17. Container-Based Clinical Solutions for Portable and Reproducible Image Analysis
J. Matelsky, **G. Kiar**, E. Johnson, C. Rivera, M. Toma, W. Gray-Roncal
Journal of Digital Imaging 31.3 (May 2018) pp. 315–320. Springer Nature.

18. Boutiques: a flexible framework to integrate command-line applications in computing platforms
T. Glatard, **G. Kiar**, T. Aumentado-Armstrong, N. Beck, P. Bellec, R. Bernard, A. Bonnet, S. T. Brown, S. Camarasu-Pop, F. Cervenansky, S. Das, R. Ferreira da Silva, G. Flandin, P. Girard, K. J. Gorgolewski, C. R. G. Guttmann, V. Hayot-Sasson, P. O. Quirion, P. Rioux, M. E. Rousseau, A. C. Evans
GigaScience 7.5 (Mar. 2018). Oxford University Press (OUP).
19. BIDS apps: Improving ease of use, accessibility, and reproducibility of neuroimaging data analysis methods
K.J. Gorgolewski, F. Alfaro-Almagro, T. Auer, P. Bellec, M. Capotă, M. M. Chakravarty, N. W. Churchill, A. L. Cohen, R. C. Craddock, G. A. Devenyi, A. Eklund, O. Esteban, G. Flandin, J. S. Guntupalli, M. Jenkinson, A. Keshavan, **G. Kiar**, P. R. Raamana, D. Raffelt, C. J. Steele, P. O. Quirion, R. E. Smith, S. Strother, G. Varoquaux, T. Yarkoni, Y. Wang, R. A. Poldrack
PLOS CB 13.3 (2017) e1005209. Public Library of Science.
20. Science In the Cloud (SIC): A use case in MRI Connectomics
G. Kiar, K. J. Gorgolewski, D. Kleissas, W. R. Gray Roncal, B. Litt, B. Wandell, R. A. Poldrack, M. Wiener, R. J. Vogelstein, R. Burns, J. T. Vogelstein
GigaScience gix013 (Mar. 2017).
21. To the Cloud! A Grassroots Proposal to Accelerate Brain Science Discovery
J. T. Vogelstein, B. Mensh, M. Häusser, N. Spruston, A. C. Evans, K. Kording, K. Amunts, C. Ebell, J. Muller, M. Telefont, S. Hill, S. P. Koushika, C. Calì, P. A. Valdés-Sosa, P. B. Littlewood, C. Koch, S. Saalfeld, A. Kepecs, H. Peng, Y. O. Halchenko, **G. Kiar**, M. M. Poo, J. B. Poline, M. P. Milham, A. P. Schaffer, R. Gidron, H. Okano, V. D. Calhoun, M. Chun, D. M. Kleissas, R. J. Vogelstein, E. Perlman, R. Burns, R. Hugarir, M. I. Miller
Neuron 92.3 (Nov. 2016) pp. 622–627. Elsevier, requested article.

proceedings in international peer-reviewed conferences

1. Pipeline-Invariant Representation Learning for Neuroimaging
Xinhui Li, Alex Fedorov, Mrinal Mathur, Anees Abrol, Gregory Kiar, Sergey Plis, Vince Calhoun
Machine Learning for Health Symposium (ML4H, NeurIPS) (2022).
2. Reducing numerical precision preserves classification accuracy in Mondrian Forests
M. Vicuna, M. Khannouz, **G. Kiar**, Y. Chatelain, T. Glatard
2021 IEEE International Conference on Big Data (Big Data) (2021) pp. 2785–2790.
3. Accurate Simulation of Operating System Updates in Neuroimaging Using Monte-Carlo Arithmetic
A. Salari, Y. Chatelain, **G. Kiar**, T. Glatard
Uncertainty for Safe Utilization of Machine Learning in Medical Imaging (UNSURE, MICCAI) (2021) pp. 14–23. Springer Publishing.
4. A Recommender System for Scientific Datasets and Analysis Pipelines
M. Mazaheri, **G. Kiar**, T. Glatard
16th Workshop on Workflows in Support of Large-Scale Science (2021). SuperComputing.
5. Deploying Large Fixed File Datasets with SquashFS and Singularity
P. Rioux, **G. Kiar**, A. Hutton, A. C. Evans, S. T. Brown
PEARC '20 (2020) pp. 72–76. Association for Computing Machinery.
6. Organization for Human Brain Mapping Open Science Hackathons: Accessible and Inclusive Neuroinformatics
E. DuPre*, **G. Kiar***, R. C. Craddock, K. J. Gorgolewski, F. Hoffstaedter, A. Keshavan, J. B. Poline, M. Visconti di Oleggio Castello, K. Whitaker, P. Bellec
2nd Workshop on Hacking and Making at Time-Bounded events (Jan. 2018). Computer Human Interaction.
7. Electric localization of weakly electric fish using neural networks
G. Kiar, Y. Mamatjan, J. Jun, L. Maler, A. Adler
Journal of Physics: Conference Series vol. 434 (May 2013).

book chapters

1. The Montreal Neurological Institute Ecosystem: Enabling Reproducible Neuroscience from Collection to Analysis in the Web
G. Kiar, C. Makowski, J. B. Poline, S. Das, A. C. Evans
(Nov. 2017) pp. 51–56. Society for Neuroscience.

invited talks & organized workshops

1. Variation in Brain Imaging – when is it meaningful? (and what can we do about it)
The Center for Biomedical Imaging and Neuromodulation, Nathan Kline Institute (Aug. 2022), Presentation.
2. Fuzzy environments for the perturbation evaluation and application of uncertainty quantification.
Chinese Open Science Network (July 2022), Presentation.
3. Variation in Brain Imaging - when is it meaningful? (and what do we do about it)
Center for Neurodevelopmental and Imaging Research, Kennedy Krieger Institute (Apr. 2022), Presentation.
4. Fuzzy Environments for the perturbation, evaluation, and application of uncertainty quantification via Monte Carlo Arithmetic
Scipy Conference (July 2021), Presentation.
5. Evaluating the Stability of Neuroimaging Pipelines
National Institute of Mental Health (Feb. 2020), Presentation.
6. Comparing Perturbation Models for Evaluating Stability of Neuroimaging Pipelines
Computational Reproducibility at Exascale (Nov. 2019), Super Computing, Presentation.
7. From “Open Science” to “Science”: Shifting the status quo in data sharing, software, and publishing
Organization for Human Brain Mapping (June 2019), Symposium and presentation.
8. Introduction to Scientific Software Development and Machine Learning
Healthy Brains for Healthy Lives (Feb. 2019), McGill University, Workshop.
9. A FAIR Approach to Neuroimaging Analysis with Boutiques
Organization for Human Brain Mapping (June 2018), Presentation.
10. Connectome Coding: what is it, how do we do it, and why do we care?
Data science in Neuroscience Symposium (June 2018), Organization for Human Brain Mapping, Presentation.
11. OHBM Annual BrainHack & TrainTrack
Open Science Special Interest Group (June 2018), Organization for Human Brain Mapping, Workshop.
12. Brainhack Global: Montreal Edition
McGill University & Universite de Montreal (June 2018), Workshop.
13. A Data Driven Approach for Tackling Big Data Connectomics
Feindel Brain Imaging Lecture (Feb. 2018), Montreal Neurological Institute, Presentation.
14. Coding for Neuroscientists: An Introduction to Neuroscience Informatics
Graduate Student Association for Neuroscience (Jan. 2018), McGill University, Workshop.
15. BigNeuro 2017: Analyzing brain data from nano to macroscale
Neural Information Processing Systems (Dec. 2017), Workshop.
16. Enabling Accessible and Scalable Neuroscience
Healthy Brains For Healthy Lives (Nov. 2017), McGill University, Presentation.

17. Platforms for high performance computing in neuroscience
Neuroinformatics in the Age of Big Data: Working with the Right Data and Tools (Nov. 2017), Society for Neuroscience, Workshop.
18. Brainhack101 & Exploratory Data Analysis
Online Intensive for Brain Science: Computation and Imaging (Sept. 2017), National Institute of Health, Presentation.
19. CloudControl: Integrating Quality Control and Pipeline Deployment in the Cloud
Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Presentation.
20. Open Science Session Chair
Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Workshop.
21. Science in the Cloud (SIC): A use-case in MRI Connectomics
Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Presentation.
22. Brain Hacking 101
Open Science Special Interest Group (June 2017), Organization for Human Brain Mapping, Presentation.
23. NeuroStorm: Accelerating Brain Science Discovery in the Cloud
Johns Hopkins University (June 2017), National Science Foundation, Workshop.

posters at international conferences

1. Validation of an epidemic spreading model to simulate A β spread in familial Alzheimer's disease
E. Levitis, J. Vogel, **G. Kiar**, T. Funck, Y. Ituria, A. C. Evans
Organization for Human Brain Mapping (June 2020).
2. Exploring the Relationship Between Early Psychosis Verbal Memory Deficits and White Matter Integrity
C. Henri-Bellemare, **G. Kiar**, K Lavigne, R. Patel, M. M. Chakravarty, M. Lepage
Organization for Human Brain Mapping (June 2020).
3. Human Structural Connectomes are Heritable
J. Chung, J. Dey, **G. Kiar**, C. E. Priebe, J. T. Vogelstein
Organization for Human Brain Mapping (June 2020).
4. Incorporating quantitative EEG analysis into the MNI Open Science neuroinformatics ecosystem
J. Bosch-Bayard, C. Rogers, E. Aubert, S. T. Brown, **G. Kiar**, T. Glatard, L. Galán-García, T. Bringas Vega, S. Das, C. Madjar, Z. Mohades, L. MacIntyre, A. C. Evans, P. Valdes-Sosa
Organization for Human Brain Mapping (June 2020).
5. Fuzzy: An Ecosystem for Evaluating the Stability of Pipelines Through Monte Carlo Arithmetic
G. Kiar, A. Salari, R. Hannema, M. Vadariya, M. Dugre, P. Rioux, P. Douglas, S. T. Brown, P. Oliveira Castro, E. Petit, A. C. Evans, T. Glatard
Organization for Human Brain Mapping (June 2020).
6. Optimal Experimental Design for Big Data: Applications in Brain Imaging
E. Bridgeford, S. Wang, Z. Yang, Z. Wang, T. Xu, C. Craddock, J. Dey, **G. Kiar**, W. R. Gray-Roncal, C. E. Priebe, B. Caffo, M. Milham, X. N. Zuo, J. T. Vogelstein
Organization for Human Brain Mapping (June 2020).
7. New Open Science features in the CBRAIN Platform
N. Beck, P. Rioux, **G. Kiar**, S. T. Brown, C. Czech, S. Boroday, X. Lecours-Boucher, D. Quesnel, C. Rogers, N. Khalili-Mahani, R. Adalat, T. Glatard, S. Das, A. C. Evans
Organization for Human Brain Mapping (June 2020).

8. Nilearn and Nistats: Machine learning and statistics for fMRI in Python
J. Dockès, K. Chawla, A. Abraham, T. Bazeille, M. Boos, S. Bougacha, D. Bzdok, J. A. Chevalier, K. Dadi, G. de Hollander, C. Delettre, E. DuPre, D. Gale, K. Gorgolewski, A. Gramfort, A. Grigis, R. Guidotti, R. Hammonds, A. Hoyos-Idrobo, J. Huntenburg, **G. Kiar**, E. Larson, G. Lemaitre, F. Liem, C. Markiewicz, T. B. Nguyen, A. L. Pinho, D. Pisner, M. Rahim, P. Sanz-Leon, S. Takerkart, B. Thirion, J. Vogel, J. Wiesner, G. Varoquaux
Organization for Human Brain Mapping (June 2020).
9. Enabling FAIR Scientific Tool Development, Dissemination, and Consumption with Boutiques
G. Kiar, E. Benderoff, J. Charrière, S. Dubé, L. O. Guérin, A. Bonnet, S. Camarasu-Pop, N. Beck, P. Rioux, S. Boroday, S. T. Brown, J. B. Poline, A. E. Evans, T. Glatard
Sage Assembly (July 2019).
10. A FAIR Approach to Neuroimaging Analysis with Boutiques
G. Kiar, E. Benderoff, J. Charrière, S. Dubé, L. O. Guérin, A. Bonnet, S. Camarasu-Pop, N. Beck, P. Rioux, S. Boroday, S. T. Brown, J. B. Poline, A. E. Evans, T. Glatard
Organization for Human Brain Mapping (June 2019).
11. Reverse Engineering the Human Connectome: Learning Function from Structure
L. E. Suarez, **G. Kiar**, R. A. Doyle, A. C. Evans, B. Misic
Resting State Brain Connectivity (Sept. 2018).
12. PIVT: A Platform Independent Visualization Tool
A. Taheri, J. Lurie, R. Abou-Haidar, S. T. Brown, S. Das, A. Doyle, N. Khalili-Mahani, **G. Kiar**, P. Kostopoulos, C. Lepage, L. Lewis, C. Makowski, C. Rogers, P. Toussaint, A. C. Evans
Organization for Human Brain Mapping (June 2018).
13. Pybids: Python tools for manipulation and analysis of BIDS datasets
T. Yarkoni, A. de la Vega, E. DuPre, O. Esteban, Y. Halchenko, M. Hanke, V. Hayot-Sasson, A. Ivanov, **G. Kiar**, C. Markiewicz, Q. McNamara, D. Petrov, J. B. Poline, R. Poldrack, K. J. Gorgolewski
Organization for Human Brain Mapping (June 2018).
14. A Principled Approach to Statistical Connectomics and Mega-Analysis
E. Bridgeford, **G. Kiar**, V. Chandrashekhar, C. Shen, C. E. Gray Roncal, B. Caffo, J. Vogelstein
Organization for Human Brain Mapping (June 2018).
15. Exploring whole-brain structural connectivity and cognitive performance in typical development
N. Al-Sharif, **G. Kiar**, B. Khundrakpam, A. C. Evans
Organization for Human Brain Mapping (June 2018).
16. Clowdr: a micro-service model for scalable, reproducible, and accessible neuroinformatics
G. Kiar, T. Glatard, S. T. Brown, A. C. Evans
Organization for Human Brain Mapping (June 2018).
17. Creativity is Unrelated to Intelligence and Personality: A Machine Learning Study
A. Doyle, **G. Kiar**, P. Toussaint, P. Lemaitre, A. C. Evans
Organization for Human Brain Mapping (June 2018).
18. An Extensible Application Programming Interface for Querying Distributed Neuroscience Datasets
G. Kiar, T. Glatard, J. B. Poline
Organization for Human Brain Mapping (June 2018).
19. Heterogeneous tau-PET signal in the hippocampus resolves discrepancies between imaging and pathology
J. Vogel, R. Ossenkoppele, **G. Kiar**, O. Hansson, A. C. Evans
Organization for Human Brain Mapping (June 2018).

20. Numerical error propagation in the HCP structural pre-processing pipelines
A. Salari, L. Scaria, **G. Kiar**, T. Glatard
Organization for Human Brain Mapping (June 2018).
21. BIDS apps: Improving ease of use, accessibility, and reproducibility of neuroimaging data analysis methods
K.J. Gorgolewski, F. Alfaro-Almagro, T. Auer, P. Bellec, M. Capotă, M. M. Chakravarty, N. W. Churchill, A. L. Cohen, R. C. Craddock, G. A. Devenyi, A. Eklund, O. Esteban, G. Flandin, J. S. Guntupalli, M. Jenkinson, A. Keshavan, **G. Kiar**, P. R. Raamana, D. Raffelt, C. J. Steele, P. O. Quirion, R. E. Smith, S. Strother, G. Varoquaux, T. Yarkoni, Y. Wang, R. A. Poldrack
Organization for Human Brain Mapping (June 2017).
22. MR Graph with Rich attribUTES DataBase (Mr. GruteDB)
G. Kiar, W. R. Gray Roncal, D. Mhembe, E. W. Bridgeford, S. Wang, C. E. Priebe, R. Burns, J. T. Vogelstein
Organization for Human Brain Mapping (June 2016).
23. The Open Connectome Project & NeuroData: Enabling Data Driven Neuroscience at Scale
Joshua T. Vogelstein, et al.
Society for Neuroscience (Oct. 2015).
24. Community Connectomics via Cloud Computing Utilizing m2g: a Reference Pipeline
G. Kiar, W. R. Gray Roncal, D. Mhembe, E. W. Bridgeford, D. Clark, M. P. Milham, R. C. Craddock, R. Burns, J. T. Vogelstein
Organization for Human Brain Mapping (June 2015).

published code

For an up-to-date list of published code projects, please visit my GitHub profile at <https://github.com/gkiar>.