


Gregory S. Kiar

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Education

- 2014 – 2016 **M.S.E. in Biomedical Engineering,**
Johns Hopkins Whiting School of Engineering, supervised by Joshua Vogelstein.
Thesis: GREMLIN: Graph Estimation from MR images Leading to Inference in Neuroscience.
- 2010 – 2014 **B.Eng in Biomedical and Electrical Engineering,**
Carleton University, supervised by Leonard MacEachern, Andrew Adler, and Rafik Goubran.
Capstone: Electrical muscle stimulation with concurrent EMG feedback of the upper arm for applications in stroke rehabilitation
- 09/16 – 10/16 **Exploring the Human Connectome, The Human Connectome Project, Boston, MA, USA.**
- 10/15 – 10/15 **Presenting Data and Information, Edward Tufte, Baltimore, MD, USA.**

Academic Experience

Current Positions

- 09/14 – now **Research Engineer, Center for Imaging Science, Johns Hopkins University.**
Development and maintenance of an open-source pipeline for multi-scale brain-graph generation from human MR images. Implementation and development statistical algorithms for quality control of data derivatives. Publicly release data products to lower the barrier to entry for neuroscience research.
- 09/14 – now **Teaching Assistant, Dept. of Biomedical Engineering, Johns Hopkins University.**
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). Has spent more than 500 hours (cumulative) working with students.

Current Activities

- 09/14 – now **Chief Neurocartographer and Core Team Member, NeuroData, <http://neurodata.io>.**
Performer on core research objectives. Chiefly responsible for content curation and presentation of grant deliverables to funding agency. Manager and organizer of public presence and conferences.

Previous Positions

- 01/15, 01/16 **Instructor, Dept. of Computer Science, Johns Hopkins University.**
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.
- 09/12 – 05/14 **Facilitator for Peer-Assisted Study Sessions, Student Academic Success Center, Carleton University.**
Instructed and demonstrated mastery of principles in electromagnetism and power engineering.
- 08/13 – 05/14 **Facilitator Team Leader, Student Academic Success Center, Carleton University.**
Provided training, mentoring, and coaching to student instructors in a variety of disciplines.
- 01/13 – 06/14 **Teaching Assistant, Dept. of Systems and Computer Engineering, Carleton University.**
Instructed introductory level C++ programming.

Work Experience

- 06/13 – 09/13 **Research Assistant under Dr. Rafik Goubran, Dept. of Biomedical Engineering, Carleton University.**
Developed wireless medical data publish-subscribe system for viewing patient vital signs remotely.

- 06/12 – 09/12 **Research Assistant under Dr. Andy Adler**, *Dept. of Systems and Computer Engineering, Carleton University*.
Utilized neural networks for inverse modeling of real and simulated biological systems.
- 06/11 – 09/11 **Research Assistant under Dr. Jeffrey Dawson**, *Dept. of Biology, Carleton University*.
Developed robotics platform for studying insect locomotion patterns and behaviour.
- 01/09 – 09/09 **Research Assistant under Dr. Jim Dimitroulakos**, *CRC, Ottawa Hospital Research Institute*.
Tested combination therapies of Lovastatin and Cisplatin drugs on colon and breast cancer strains.

Volunteer Experience

- 06/15 – 09/16 **College Mentor & Essay Reviewer**, *College Prep Program*.
- 09/14 – 06/16 **Grandparent & Volunteer**, *Thread (formerly Incentive Mentoring Program)*.
- 06/13 – 05/14 **President**, *Carleton University Biomedical Engineering Society*.
- 09/13 – 06/14 **Co-Founder and Vice President**, *PASS Talks*.
- 12/12, 12/13 **Navigator and Driver**, *Operation Red Nose Ottawa*.
- 09/10 – 09/11 **Emergency First Responder**, *Carleton University Student Emergency Response Team*.

Skills

- Languages **English, American Sign Language (basic)**.
- Coding **MATLAB, Python, R, LaTeX, HTML/CSS, x86 and ARM assembly**.
- Soft skills **Leadership, problem-solving, clear and effective communication, design**.

Awards & Honors

- 2014 **Greatest Social Impact Paper**, *Professional Engineering Ontario (PEO)*.
- 2014 **SEED Fund**, *Carleton University Engineering Alumni*.
- 2014 **IEEE Papers Showcase Local Winner**, *IEEE Ottawa-Carleton Chapter*.
- 2014 **IEEE Papers Showcase Provincial Runner-up**, *IEEE*.
- 2014 **Carleton Electronics Project Competition Champion**, *Carleton University*.
- 2013 **Engineering '65 and '66 Scholarship**, *Carleton University*.
- 2012–2014 **Dean's Honour List**, *Carleton University*.
- 2012 **Clarence C. Gibson Scholarship**, *Carleton University*.

Under Review Pre-Prints

- 1 G. Kiar, K. J. Gorgolewski, D. Kleissas, W. Gray Roncal, B. Litt, B. Wandell, R. A. Poldrack, M. Wiener, R. Vogelstein, R. Burns, and J. T. Vogelstein. [Science In the Cloud \(SIC\): A use case in MRI Connectomics](#). 2016.
- 2 J. T. Vogelstein, K. Amunts, A. Andreou, D. Angelaki, G. Ascoli, C. Bargmann, R. Burns, C. Cali, F. Chance, M. Chun, G. Kiar, et al. [Grand Challenges for Global Brain Sciences](#). *F1000 Research*, 2016.
- 3 K. J. Gorgolewski, F. Alfaro-Almagro, T. Auer, P. Bellec, M. Capota, M. M. Chakravarty, N. W. Churchill, R. C. Craddock, G. A. Devenyi, A. Eklund, O. Esteban, G. Flandin, S. S. Ghosh, J. S. Guntupalli, M. Jenkinson, A. Keshavan, G. Kiar, P. R. Raamana, D. Raffelt, C. J. Steele, P.-O. Quirion, R. E. Smith, S. C. Strother, G. Varoquaux, T. Yarkoni, Y. Wang, and R. A. Poldrack. [BIDS Apps: Improving ease of use, accessibility and reproducibility of neuroimaging data analysis methods](#). *bioRxiv*, 2016.

Peer-Reviewed Journal Publications

- 1 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, and M. I. Miller. [To the Cloud! A Grassroots Proposal to Accelerate Brain Science Discovery](#). *Neuron*, 92(3):622–627, 2016/11/07.

Peer-Reviewed Conference Proceedings

- 1 G. Kiar, Y. Mamatjan, J. Jun, L. Maler, and A. Adler. [Electric localization of weakly electric fish using neural networks](#). *Journal of Physics: Conference Series*, 434, 2013.

Work in Progress – Pre-prints Available upon Request

- 1 J. T. Vogelstein et al. [NeuroData: Enabling Neuroscience for Everyone](#). *In Preparation*, 2016.
- 2 G. Kiar*, W. R. Gray Roncal*, et al. [m2g: A reference pipeline for reliable connectome estimation](#). *In Preparation*, 2016. *co-first author.
- 3 W. R. Gray Roncal, J. Matelsky, G. Hwang, G. Kiar, C. Bradfield, and M. Wolmetz. [Testing the promise of graph-based analyses of white-matter connectivity](#). *In Preparation*, 2016.
- 4 S. Wang, Z. Yang, X.-N. Zuo, M. Milham, C. Craddock, G. Kiar, W. R. Gray Roncal, E. Bridgeford, CORR, C. E. Preibe, and J. T. Vogelstein. [Optimal Decisions for Discovery Science via Maximizing Discriminability: Applications in Neuroimaging](#). *In Preparation*, 2016.

Other Publications

- 1 G. Kiar, W. Gray Roncal, D. Mhembe, E. Bridgeford, R. Burns, and J. Vogelstein. ndmg: Neurodata's mri graphs pipeline, August 2016.

Poster Presentations

- 1 G. Kiar, W. R. Gray Roncal, D. Mhembe, E. Bridgeford, S. Wang, C. Priebe, R. Burns, and J. T. Vogelstein. [MR Graph with Rich attribUTES DataBase \(Mr. GruteDB\)](#). In *Organization for Human Brain Mapping*, 2016.
- 2 J. T. Vogelstein et al. [The Open Connectome Project & NeuroData: Enabling Data Driven Neuroscience at Scale](#). In *Society for Neuroscience*, 2015.
- 3 G. Kiar, W. R. Gray Roncal, D. Mhembe, E. Bridgeford, D. Clark, M. Milham, C. Craddock, R. Burns, and J. Vogelstein. [Community Connectomics via Cloud Computing Utilizing m2g: a Reference Pipeline](#). In *Organization for Human Brain Mapping*, 2015.