





Eric Bridgeford

Biomedical Engineer and Computer Scientist

contact

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languages

English, basic French

programming

Python, R, UNIX 
Java, Matlab, SQL
C++, C
Javascript, CSS & HTML

tools

Django, FSL, Git
Docker, EC2, S3
Android

soft skills

leadership, design,
problem solving

education

- 2013 – 2017 **B.S.** in Biomedical Engineering and Computer Science
minor in Applied Mathematics and Statistics Johns Hopkins University, Baltimore, MD
Thesis work supervised by Dr. Joshua T. Vogelstein on project entitled:
Functional Neurodata Graphs Service: a One-Click Pipeline for the Reliable Esti-
mation of Functional Connectomes.
- 2009 – 2013 **High School** La Salle College High School Wyndmoor, PA

experience

Academic Experience

Positions

- 08/14 – now **Center for Imaging Science, Johns Hopkins University** Baltimore, MD
Undergraduate Researcher under Joshua T. Vogelstein
Design and implementation of an open-source fMRI pipeline for robust one-click
analysis. Development of extensive quality multi-modal MR quality control suite.
Statistical work focusing on making inferences from fMRI connectomes.
- 05/14 – 02/16 **Complex Systems Group, University of Pennsylvania** Philadelphia, PA
Undergraduate Researcher under Danielle S. Bassett
Assisted in the development of novel network theory statistics to compare net-
work performance. Publicly available code for assessing small world propensity
in weighted, real world networks, a statistic that improves the robustness and
scaling of measures of small worldness.

Organizations and Volunteer Work

- 03/08 – now **Special Olympics Male Gymnastics Coach, Hatboro YMCA** Hatboro, PA
Volunteer to mentor & coach special needs gymnasts. Head male gymnastics
coach from 03/2011 – 05/14.
- 04/14 – present **Sigma Chi Fraternity, KY Chapter** Baltimore, MD
Chapter Risk manager from 09/14 – 05/15.

awards

- 09/14 – now **Martha A. Lavery Scholarship** Johns Hopkins University, Baltimore, MD
Grant awarded for merit achievement.
- 05/15 – now **Dean's List** Johns Hopkins University, Baltimore, MD
Awarded for maintaining a GPA above a 3.5/4.0.
- 09/15 **Everyblock API Award** University of Pennsylvania Pennapps, Philadelphia, PA
Awarded for the best application making use of the Everyblock API for app Stroll-
Safe.

interests

professional: pipeling engineering, cloud computing, data analysis, neuroscience, reproducibility, timeseries analysis.

personal: guitar, cooking, design, animals, hiking, biking, scale model warships.

publications

articles in peer-reviewed journals

1. Small-World Propensity in Weighted, Real-World Networks

Sarah F. Muldoon, Eric W. Bridgeford, Danielle S Bassett

Scientific Reports (Feb. 2016).

posters at international conferences

1. MR Graph with Rich attribUTES DataBase (Mr. GruteDB)

Gregory Kiar, William R Gray Roncal, Disa Mhembere, Eric Bridgeford, Shanshi Wang, Carey Priebe, Randal Burns, Joshua T. Vogelstein

Organization for Human Brain Mapping (June 2016).

2. The Open Connectome Project & NeuroData: Enabling Data Driven Neuroscience at Scale

Joshua T. Vogelstein, et al.

Society for Neuroscience (Oct. 2015).

3. Quantifying Small Worldness in Weighted Brain Networks: Small-World Propensity

Society for Neuroscience (SfN) (2015).

4. Community Connectomics via Cloud Computing Utilizing m2g - a Reference Pipeline

Organization for Human Brain Mapping (OHBM) (2015).

5. MRImages to Graphs: A One Click Community Pipeline for MR Connectome Analysis

Kavli Coffee Hour (2015).

6. MRImages to Graphs: A One Click Community Pipeline for MR Connectome Analysis

Institute for Computational Medicine Poster Session (2015).

works in progress

1. Optimal Decisions for Discovery Science via Maximizing Discriminability: Applications in Neuroimaging

Shanshi Wang, Zhi Yang, Xi-Nian Zuo, Michael Milham, Cameron Craddock, Gregory Kiar, William Gray Roncal, Eric Bridgeford, Carey E Priebe, Joshua T Vogelstein

request for preprint (2016).

2. NeuroData: Enabling Neuroscience for Everyone

Joshua T. Vogelstein, et al.

In Preparation (2016).

3. MRImages to Graphs

Gregory et al. Kiar

work in progress (2016).

4. Dimensionality Reduction in the Acquisition of fMRI Brain Graphs and its Impact on Discriminability

Eric W Bridgeford, et al.

work in progress (2016).

5. Functional Neurodata Graph Service: a One-Click Pipeline for Functional Connectome Estimation (FNGS)

Eric W Bridgeford, et al.

Computer Science Honors Thesis (2016).

6. Dynamic Understanding of the Working Memory Paradigm

Eric W Bridgeford, et al.

Biomedical Engineering Undergraduate Design Project (2016).

talks

1. From the Functional Brain to the Connectome: An Introduction to Neuroscience Research in the 21st Century

(2016).