EricBridgeford

Biomedical Engineer and Computer Scientist

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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

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 Estimation 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 network 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 work mentoring & coaching special needs gymnasts. Head male gymnastics coach from 03/11 – 05/14.

04/14 – now **Sigma Chi Fraternity, $\mathrm{K\Upsilon}$ Chapter** — Baltimore, MD
Chapter Risk manager from 09/14 – 05/15.

awards

09/14 – now **Martha A. Laverty 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 StrollSafe.

interests

professional: pipeling engineering, cloud computing, data analysis, neuroscience, reproducibility, timeseries analysis, machine learning.
personal: guitar, cooking, hiking, biking, scale model warships, rock climbing.

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).

conference posters

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

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

   Organization for Human Brain Mapping (OHBM) (June 2016).

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

   Sarah Muldoon, Eric W Bridgeford, Danielle Bassett

   Society for Neuroscience (SfN) (Oct. 2015).

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

   Joshua T. Vogelstein, et al.

   Society for Neuroscience (SfN) (Oct. 2015).

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

   Gregory Kiar, et al.

   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

   Shangsi 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.