JENNIFER STISO

data scientist ◇ jeni.stiso@gmail.com ◇ jenniferstiso.com ◇ github.com/jastiso

EDUCATION

University of Pennsylvania - PhD in Neuroscience *Aug 2021 (expected)*
University of California at Berkeley - BA in Molecular Biology & Cognitive Science *Aug 2016*

PROJECTS

Neural Underpinnings of Relational Learning (MATLAB, R, Python, Javascript)

- Designed experiment to probe higher-order relational learning ability in humans
- Applied information-theoretic learning algorithm to relational learning experiment
- Identified evidence in neural features for representations of temporal sequence structure that were consistent with learning algorithm
- Wrote successful proposal for funding from the NIH (awarded 16% of applicants)

Network Control Models for Understanding Human Brain Stimulation (MATLAB, R, Python)

- Worked collaboratively to produce biweekly deliverables that were presented to diverse staff at DARPA
- Successfully applied tools from graph theory, and network control theory to model the spread of electrical stimulation in the brain
- Successfully used non-negative matrix factorization and signal processing to identify neural correlates of brain computer interface learning

Tools for Combating Citation Bias (JavaScript, HTML, Python)

- Designed and deployed a Google Chrome Extension that used natural language processing and bibliometrics to display the gender of first and last authors of papers appearing on the results page of a PubMed or Google Scholar Search to help researchers mitigate gender-biased citation practices
- Implemented automated name matching from paper titles to the Gender Diversity Statement and Code Notebook, which displays the proportion of citations for each gender in a bibtex file
- Led a team of 5-10 neuroscientists in the Organization for Human Brain Mapping Hackathon to contribute to both tools

Python Data Science Bootcamp

- Designed and delivered one 3 hour lecture on the Pandas package, and one 1 hour lecture on machine learning with the SciKit Learn package for graduate students attending the Python Data Science Bootcamp

EXPERIENCE

PhD Candidate, University of Pennsylvania - Complex Systems Group (Bioengineering) *Aug 2017*

- Researched computational models of higher-dimensional learning and neurotransmission with neurosurgical implants and electrical stimulation in humans
- Developed external collaborations with researchers from with individuals from the ARMY, DARPA, JHU APL, and INRIA (Paris)

Intern, Johns Hopkins Applied Physics Lab - Intelligent Systems Group *July 2020 - Oct 2020*

- Independently guided research project modeling activity spread in biological neural networks
- Wrote Python code implementing graph models common in human neuroscience research for use in larger (10^6 connections) connectomics datasets
- Advised interns on writing, data visualization, research program investigating the impact of biological neural connection motifs on weight agnostic artificial neural networks

Medical Device Startup, University of Pennsylvania *Aug 2019 - January 2020*

- Quantified early adoption market and execution strategy for small health-tech startup in the Philadelphia area that specializes in neurofeedback devices.

RECENT INVITED TALKS

Effects of Interictal Discharges on Functional Connectivity. *Philadelphia, PA. 2020*
Women in Data Science Conference.
Network Models of Brain Structure, Function, and Control. *Rome, Italy. 2019*
Organization for Human Brain Mapping.
Using Control Theory to Model Direct Electrical Brain Stimulation. *Paris, France. 2018*
Networks in Big Data and Personalized Medicine Satellite.

RECENT PUBLICATIONS

Stiso, J., ... Bassett, D. S. (2020). Learning in brain-computer interface control evidenced by joint decomposition of brain and behavior. *Journal of Neural Engineering.* doi:10.1088/1741-2552/ab9064.
Stiso, J., ... Bassett, D. S. (2019). White Matter Network Architecture Guides Direct Electrical Stimulation Through Optimal State Transitions. *Cell Reports.* 28(2554 - 2566).

LEADERSHIP

Co-Director of Graduate Led Initiatives and Activities, University of Pennsylvania *2020*
Negotiated an increase in funds totaling 41% of initial budget ($8,000) from three separate funding sources within the University of Pennsylvania

RECENT AWARDS

Ruth L. Kirschstein National Research Service Award, University of Pennsylvania *2020*
national level PhD funding totaling $46,000
Jameson Hurvich Travel Award, University of Pennsylvania *2019*
travel award to present research at international conference