

JENNIFER STISO

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

SKILLS

Programming: Python, R, MATLAB, Javascript, SQL, Java, Latex, HTML

Fields: graph theory, gender studies, neuroscience, machine learning, psychology

Interpersonal Skills: communication, time management, organization

EXPERIENCE

Data Scientist, Children's Hospital of Philadelphia

March 2022

- Added and deployed two new data visualizations to existing dashboard for understanding gas use in the anesthesia department
- Developed and evaluated double/debiased machine learning model of clinical interventions for infants with congenital heart defects in intensive care
- Contributed to a review of clinical explainable AI research by reading and annotating 25 relevant papers

Research Engineer, Univ. of Pennsylvania Bioengineering

Jan 2021 - March 2022

- Lead developer on team with 2 other researchers to design and develop web based behavioral experiments completed by thousands of individuals using Amazon Mechanical Turk (AWS), JavaScript, SQL and Heroku
- Collaborated with Office of Diversity and Inclusion at the Perelman School of Medicine to quantify [gender and racial bias in medical student evaluations](#)
- Led development of Python [software package](#) with 2 other researchers for network control theoretic analysis
- Developed agent-based network model of citation behaviors in the scientific community
- Designed and deployed a [Google Chrome Extension](#) that used natural language processing and bibliometrics to display the gender of papers' authors on web search
- Improved robustness of [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 contributors to tools for citation transparency in the Organization for Human Brain Mapping Hackathon

PhD Candidate, Univ. of Pennsylvania Neuroscience

Aug 2017 - Jan 2021

- Collaborated with 4 labs across 3 universities to develop [multi-layer network control framework](#) for identifying links between gene expression and brain activity
- With 2 technicians, designed and implemented experiment to probe human relational learning and applied information-theoretic learning algorithm to [relational learning](#) experiment
- Wrote successful proposal for individual fellowship from the NIH (\$46,000; 16% funding rate)
- Developed a [processing pipeline](#) with custom quality checks for large publicly available dataset of neural recordings in over 300 individuals (.5Tb) with epilepsy
- In collaboration with leading mathematician, successfully applied tools from graph theory, network control theory, and non-negative matrix factorization to model the [spread of electrical stimulation](#) and [BCI control](#) in the brain

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

Consultant for Medical Device Startup, University of Pennsylvania *Aug 2019 - Jan 2020*

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

Rotation Student, Univ. of Pennsylvania Neuroscience *Aug 2016 - Aug 2017*

- Explored effects of different functional MRI preprocessing parameters on associations between the brain and behavior
- Collected data and developed analyses for dynamical-systems-based predictor of consciousness during anesthesia induction

EDUCATION

University of Pennsylvania - PhD in Neuroscience *Jan 2021*

University of California at Berkeley - BA in Molecular Biology & Cognitive Science *Aug 2016*

SELECT INVITED TALKS (3/8)

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: Data Science in Neuroscience Symposium.

Using Control Theory to Model Direct Electrical Brain Stimulation. *Paris, France. 2018*

Network Science: Networks in Big Data and Personalized Medicine Satellite.

SELECTED PUBLICATIONS (3/15)

Stiso, J., ... Bassett, D. S. (2022). [Neurophysiological Evidence for Cognitive Map Formation during Sequence Learning.](#) *ENeuro*, 9(2).

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 AND TEACHING

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

Python Data Science Bootcamp *2019*

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](#)

RECENT AWARDS

NGG APICAL Honorable Mention, University of Pennsylvania *2021*

program level award for leadership in outreach programs

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