

JENNIFER STISO

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SKILLS

Programming: Python (sklearn, pandas), R (tidyverse, shiny), SQL, Javascript

Fields: graph theory, machine learning, neuroscience, clinical bioinformatics, gender studies

EXPERIENCE

Data Scientist, Children's Hospital of Philadelphia

March 2022 - present

- Designed and deployed two new features to a dashboard that summarizes the environmental impact of anesthetics to clinical stakeholders, resulting in a 28% reduction in greenhouse gas emissions after dashboard deployment (R)
- Developed and evaluated a flexible pipeline for causal inference of medicine-based interventions for cardiac events (Python)
- Critically read and annotated 25 explainable AI papers as part of a structured review written by 4 team members
- Created, documented, and maintained a Postgres database of EHR data (>58,000 patients) that supported projects led by two different colleagues (SQL)

Research Engineer, Univ. of Pennsylvania Bioengineering

Jan 2021 - March 2022

- Lead developer on team with 2 other researchers to design and implement 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](#) (Python)
- 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 Application](#) that used natural language processing and bibliometrics to display the gender of papers' authors on web search (Python)
- Improved the robustness of an open source [Gender Diversity Statement and Code Notebook](#), which displays the proportion of citations for each gender in a bibtex file (Python)
- 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 (Python)
- With 2 technicians, designed and implemented experiment to probe human relational learning and applied information-theoretic learning algorithm to [relational learning](#) experiment (Javascript, SQL, Python)
- Developed a [processing pipeline](#) with custom quality checks for large publicly available dataset of neural EEG timeseries in over 300 individuals (.5Tb) with epilepsy (MATLAB)
- 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 (R, Python, MATLAB)
- Authored > 20 [research articles](#) (5 first author), with > 500 citations over the past 2 years

Intern, Johns Hopkins Applied Physics Lab - Intelligent Systems Group

July 2020 - Oct 2020

- Independently guided research project modeling activity spread in biological neural networks (Python)

- Contributed open-source Python code implementing common graph models in larger connectomics datasets (10^6 connections)
- 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, Univ. 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.

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.

LEADERSHIP AND TEACHING

Co-Director of Graduate Led Initiatives and Activities, Univ. 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](#)

Guest Lecture and Teaching Assistant, University of Pennsylvania

2018-2021

led discussion section for 25 students in introductory neuroscience course; gave 3 graduate-level guest lectures on mathematical models of brain activity

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