JEREMY SCHROETER

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EDUCATION

University of Washington Oct 2020 - Jun 2023
B.S. Neuroscience
Overall GPA: 3.69
Core classes: Cellular and Molecular Neuroscience, Systems and Behavioral Neuroscience, Quantitative Methods in Neuroscience, Computational Models for Cognitive Neuroscience, Advanced Linear Algebra, Machine Learning, Machine Learning for Neuroscience

PUBLICATIONS/POSTERS

Shaker, J., **Schroeter**, **J**., Birman, D., Steinmetz, N. Dynamic context setting in the anterodorsal midbrain reticular formation during flexible decision-making *Paper in preparation*

Shaker, J., **Schroeter**, **J**., Birman, D., Steinmetz, N. Subdivisions of the midbrain reticular nucleus contain distinct connectivity, gene expression, and roles in context-dependent perceptual decision-making *SfN 2024*

Shaker, J., **Schroeter**, **J**., Birman, D., Steinmetz, N. Computation of context in the midbrain reticular nucleus during perceptual decision-making *SfN 2023*

RESEARCH EXPERIENCE

Parcellation of the midbrain reticular formation Mar. 2024 - Present
Supervised by Professor Nick Steinmetz
Developing algorithms for parcellation of the midbrain reticular formation using spatial transcriptomics, distributions of coding neurons and viral neuronal tracing data. Using these methods to discover previously unidentified subregions of the MRF.

Behavioral modeling of a reverse contingency task Mar. 2023 - Present
Supervised by Professor Nick Steinmetz
Developed and assessed a set of behavioral models to predict choices on a reverse contingency perceptual decision making task. Analyzed these models to better understand behavioral strategies and extracted a latent variable from these models to regress against neural data.

Accelerating convolutions for sparse image arrays Jan. 2023 - Mar. 2023
Supervised by Professor Matt Golub
Developed and benchmarked algorithms for leveraging sparsity constraints to accelerate convolutional neural networks.

Hierarchical variational autoencoders for protein inpainting Mar. 2022 - Jan. 2023
Supervised by Professor David Baker, Dr. David Juergens, and Dr. Joseph Watson
Developed and tested deep learning models for learning distributions over 2D representations of protein structures to assist in protein inpainting.

TEACHING EXPERIENCE

University of Washington Winter, Autumn 2024
Instructor, NEUSCI440/490 Intro to Neural Data Analysis

Designed and taught a quantitative companion course for the undergraduate neuroscience labs. Introduced students to the Python programming language, scientific computing, visualization, and neural data analysis. Developed a Python library for students to load data, perform spike sorting, and conduct analyses.

SKILLS

Programming	Python, Python scientific computing ecosystem, PyTorch
Electrophysiology	Neuropixels trajectory planning, Neuropixels 1.0/2.0