Tianxiao He

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EDUCATION

New York University — New York, NY
Ph.D., Computer Science — Sep 2023 - Present
Academic Advisor: Erdem Varol

Columbia University — New York, NY
B.S., Computer Science — May 2023
Research Advisor: Liam Paninski
GPA: 3.9/4.0 (*cum laude*)

Bard College at Simon's Rock — Great Barrington, MA
B.A., Computer Science (early college) — May 2021
GPA: 4.0/4.0 (*summa cum laude*)

RESEARCH EXPERIENCE

Columbia University — New York, NY
Research Assistant, Department of Statistics — Sep 2022 – Aug 2023

- Developed a density-based neural decoding method that bypasses spike sorting
- Applied dynamical MoG to model spike distributions and employed variational inference to fit the resulting model and to perform decoding
- Benchmarked the model using recordings from various animals and probes and showed better performance than spike sorting and previous clusterless decoders

Columbia University — New York, NY
Research Assistant, Department of Computer Science — Jan 2022 – Jun 2022

- Extracted nonlinear embeddings from animal videos using variational autoencoder
- Decoded behavioral embeddings from Neuropixel recordings with temporal convolution
- Assessed decoder performance by comparing true behavior frames to reconstructed frames from predicted embeddings

TEACHIING EXPERIENCE

Bard College at Simon's Rock — New York, NY
Teaching Assistant, Department of Computer Science — Jan 2019 - Dec 2019

- Served as TA in Python Programming, Algorithms & Data Structure
- Conducted group review sessions for class materials and provided individual assistance to students with homework and projects
- Developed interactive web application for beginners to learn Python, and created exercises and video explanation for various learning modules

CONFERENCE PRESENTATION

Yizi Zhang*, Tianxiao He*, Julien Boussard, Cole Hurwitz, Erdem Varol, Charlie Windolf, Olivier Winter, Matt Whiteway, The International Brain Lab, & Liam Paninski. (2023). Density-based Neural Decoding using Spike Localization for Neuropixels Recordings. Computational & Cognitive Neuroscience Conference (COSYNE) 2023

PROFESSIONAL DEVELOPMENT

Computational & Cognitive Neuroscience (CCN) Summer Program

Cold Spring Harbor Asia June 2023 – July 2023

- Attended lectures and seminars on neural circuit mechanism of higher cognitive functions
- Implemented Recurrent Neural Networks to model human dorsal and ventral pathway through continual learning of visual tasks

AWARDS & FELLOWSHIPS

NYU School of Engineering PhD Fellowship	2023-2024
Columbia University Dean's List	2021-2022
Simon’s Rock Dean's List	2019-2021
Simon’s Rock Merit Scholarship	2018-2021