

# Tianxiao He

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## EDUCATION

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**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

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**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

## TEACHING EXPERIENCE

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**Bard College at Simon's Rock** Great Barrington, MA  
*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

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## CONFERENCE PRESENTATION

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Yizi Zhang\*, Tianxiao He\*, Julien Bussard, 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

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### 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

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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