

Zelin (Linda) Zhao

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EDUCATION	New York University, New York, NY	Sep 2020 - May 2024
	Bachelor of Arts in Psychology, Honors	
	Bachelor of Arts in Mathematics	
	<ul style="list-style-type: none">• Cumulative GPA: 3.85• Psychology Major GPA: 4.0; Mathematics Major GPA: 3.73	
AWARDS & HONORS	Hillary Anne Citrin Award for Outstanding Honors Thesis	May 2024
	Coons/Leibowitz Award & Stipend for Honors Research	May 2023
	Dean's Undergraduate Research Fund Grant	May 2023 - May 2024
	Dean's List for Academic Year	Sep 2020 - May 2024
RESEARCH EXPERIENCE	Relationship Between Cortical Magnification and Visual Crowding Distance	Sep 2023 - Present
	Psychology Honors Project	
	<i>Advisor: Dr. Jonathan Winawer (NYU)</i>	
	<ul style="list-style-type: none">• Investigate the relationship between brain structure and function with respect to visual crowding; perform analyses of cortical magnification to identify whether human visual areas V1, V2, V3, or hV4 serve as the neural basis for crowding.• Collected data of visual crowding distance through psychophysics experiments; collected structural and functional MRI scans to acquire retinotopic data.• Performed model fitting for both crowding distance vs eccentricity and cortical magnification vs eccentricity to infer cortical crowding distance.	
	Variability of Visual Areas hV4, VO1, and VO2 in a Large Sample of Humans	Jan 2023 - Aug 2023
	<i>Advisors: Dr. Jonathan Winawer (NYU), Dr. Noah Benson (U Washington)</i>	
	<ul style="list-style-type: none">• Performed statistical analyses of the largest available dataset of retinotopic measurements in hV4, VO1, and VO2 of humans, using boundaries delineated by six researchers in the annotation project.• Wrote python scripts to assess cortical properties (surface area, cortical magnification, etc), and ran these scripts for the dataset across researchers.• Learned methods to calculate areal cortical magnification, radial and tangential cortical magnification.• Executed high-dimensional optimization to analyze magnification on the cortical surface.	

Annotation of Visual Map Boundaries Sep 2021 - Present*Advisors: Dr. Jonathan Winawer (NYU), Dr. Noah Benson (U Washington)*

- Hand-label boundaries for hV4, VO1, VO2 on the human visual cortex for 362 hemispheres, using the Human Connectome Project dataset.
- Using Python, performed descriptive statistical analysis and correlation analysis on the visual area boundaries.
- Hypothesized the reasons why raters disagreed on certain observers' visual area boundaries.
- Prepared a manuscript for publication.

Predicting Mouse Behavior Using LSTM Model Jul 2023*NeuroMatch Academy: Computational Neuroscience*

- Preprocessed behavior dataset to make it suitable for recurrent neural network data training.
- Trained an LSTM model to predict the next frame movement of the mouse using CalMS21 dataset.

Role of Prefrontal Cortex Activity in Behavioral Deficits Caused by Maternal Separation May 2022 – Aug 2022*Advisor: Dr. Catia M. Teixeira (The Nathan S. Kline Institute for Psychiatric Research)*

- Executed operant conditioning behavioral testing, including FR1, FR5, and PR schedules, to study whether maternal separation caused deficits in motivation.
- Collaborated with postdocs to perform PCR, bicinchoninic acid (BCA) assay, western blot, delayed-non-match-to-sample test, and fear conditioning.
- Performed mouse husbandry: checking pregnancy, weaning, marking tail, ear tagging, monitoring weights, and changing new cages.

PRESENTATIONS **Zhao Z.**, Benson NC., Kurzawski JW., Pelli D., Winawer J., Conservation of Cortical Crowding Distance Across Eccentricity in Human V4. Poster presented at Annual Meeting of the Vision Sciences Society (May 2024)

Zhao Z., Teixeira CM., Role of Prefrontal Cortex Activity in Behavioral Deficits Caused by Maternal Separation. Poster presented at New York University CAS Undergraduate Research Conference (May 2023)

RELEVANT**SKILLS**

- Neuroimaging and Psychological Methods: psychophysics, fMRI, dMRI
- Programming Languages: Python, MATLAB, Pytorch, Julia, Java, bash
- Software: Adobe Creative Suite, Microsoft Suite, Keras
- MRI Certified: Level 3 MRI Operator at NYU Center for Brain Imaging (can operate the scanner independently)
- Languages: English, French, Chinese