**Jieyu Zheng**

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**EDUCATION**

**California Institute of Technology, Pasadena, U.S.A.** Sep. 2020 - Present

Doctor of Philosophy in Neurobiology, Expected in Dec. 2025

Thesis topic: Complex Cognition in Mouse Maze Navigation, With and Without Cortex

Supervisor: **Dr. Markus Meister**, Biaggini Professor of Biological Sciences

President of the Neurotechers, Caltech’s Neuroscience Graduate Student Organization

2023 Chen Diversity and Inclusion Grant Awardee

2024 Chen Innovator Grant Awardee

**University of Cambridge, Cambridge, U.K.** Oct. 2018 - Jul. 2019

Master of Philosophy in Psychology and Education (First Class). Supervisor: Wendy Browne

Thesis Topic: Understanding Shame in Mathematical Achievement – A Systematic Review Using Meta-analysis

**Cornell University, Ithaca, NY, U.S.A.** Aug. 2016 - May 2018

Bachelor of Science in Biological Engineering, Magna Cum Laude (GPA:3.80/4.3)

College of Agriculture and Life Sciences (CALS) Dean’s List (GPA above 3.50 Every Semester)

2018 Rhodes Scholarship in China Finalist

**Shanghai Jiao Tong University (SJTU), Shanghai, China** Sep. 2014 - Jun. 2016

Bachelor of Engineering in Food Science and Engineering | Zhiyuan Honor Degree and Scholarship (Top 5%)

GPA (overall): 3.91/4.3; Total-grade ranking before transfer to Cornell: 1/162

China National Scholarship (Top 1%)

**RESEARCH PROJECTS**

**Mice in the Manhattan Maze: Rapid learning and Flexible Routing, W/ and W/O Cortex** Dec. 2021 - Present

Supervisor: **Markus Meister,** Professor of Biological Sciences; Pietro Perona, Professor of Electrical Engineering, Caltech

* Designed behavioral apparatus “the Manhattan Maze”, experiments and built the arena for testing and recording.
* Processing and analyzing video data using computer vision and self-developed python packages.
* Managing the acortical animal colony and an independent neuroethology project (Awarded 2023 Chen Innovator Grant)
* Leading the maze group team (including another PhD student and 4 undergraduate research assistants) across two research groups.
* Presented at SfN 2022; Curiosity, Creativity and Complexity 2023 (with Travel Award), Simons Collaboration on the Global Brain (SCGB 2023 site visit); Cognitive Computational Neuroscience 2024 (with Travel Award and selected talk, <5% of the abstracts); Harvard RL and Brain Seminar Fall 2024.

**Mesolimbic Dopamine Signaling and Cognitive Flexibility** | *Research Assistant* Sep. 2019 - Feb. 2020

Supervisor: Trevor Robbins, Professor of Cognitive Neuroscience, University of Cambridge

* Maintained facilities and trained rat subjects for four different behavioral paradigms.
* Analyzed behavioral test results, fitted with reinforcement learning models, using R.

***Ex vivo* Imaging of *Drosophila* Olfactory System Development** | *Research Assistant* May - Aug. 2017

Advisor: Liqun Luo, Professor of Biology, Investigator ofHoward Hughes Medical Institute, Stanford University

**High Fat Diet and Alzheimer’s Disease-related Pathology |** *Research Assistant* Oct. 2016 - May 2018

Advisor: Chris Schaffer, Associate Professor of Meinig School of Biomedical Engineering, Cornell University

**Functions of CXCL12 during Recovery from Ischemic Strokes in Mice |** *Research Assistant*Jan. - Oct. 2015

Advisor: Yongting Wang, Professor of Med-X Neuroscience and Engineering Centre, SJTU

**TEACHING AND ADVISING EXPERIENCES**

**CNS 187 Neural Computation** | *Head Teaching Assistant* Spring 2022, 2023

Instructors: Markus Meister & Ueli Rutishauser, Professors of Computation & Neural Systems, Caltech

* Designed and graded weekly homework assignments and final projects.
* Held weekly office hours and monitored online discussion forums.
* Oversaw course logistics, lecture recording and attendance.

**President for the Neurotechers,** Caltech Jun. 2023 - Present

Academic Event Co-chair for the Neurotechers, Caltech Feb. 2022 - Jun. 2023

Data Science and AI for Neuroscience Summer School, Caltech | *Participant* Jul. 2022

Executive Education Programs at Møller Centre, University of Cambridge| *Client Relationship Assistant* Jul. - Sep. 2019

BEE 2600 Principles of Biological Engineering| *Undergraduate Teaching Assistant* Jan. - Dec. 2017

Cornell Cooperative Extension for Students with Special Needs | *Mentor*  Feb. - May 2018

Harvard College AUSCR Summit for Young Leaders in China | *Exceptional Teaching Fellow* Aug. 2018

BEE 4890 Social Entrepreneurship with the SOS Children’s Village in Chile | *Project Manager* Aug. - Dec. 2017

Cornell Empathy, Assistance and Referral Service (EARS) | *Peer Counsellor* Aug. - Dec. 2017

China Thinks Big Venture Challenge Program | *Team Leader* Jan. 2015

**PUBLICATIONS**

**Zheng, J.,** and Meister, M. (2024). The Unbearable Slowness of Being. *Accepted by Neuron.*

**Zheng, J.,** Hu, J., Guimaraes, R., Perona, P. and Meister, M. (In prep). Mice in Manhattan: Rapid Learning and Flexible Routing in a Massively Reconfigurable Maze.

**Zheng, J.,** Turan, Z., (co-first authors)Pollak, D., … and Meister, M. (In prep). Life Without Cortex.

Jiang, L., Li, W., Mamtilahun, M., Song, Y., Ma, Y., Qu, M., Lu, Y., He, X., **Zheng, J.** . . . Wang, Y. (2017). Optogenetic Inhibition of Striatal GABAergic Neuronal Activity Improves Outcomes After Ischemic Brain Injury. *Stroke, 48*(12), 3375-3383.

Bracko, O., Cruz, J., N. Njiru, B., Swallow, M., **Zheng, J.**, Ali, M., … Schaffer, C. (2018). Stalled Blood Flow in Brain Capillaries Is Responsible for Reduced Cortical Perfusion and Impacts Cognitive Function in Mouse Models of Alzheimer's Disease. *Alzheimer’s & Dementia*, *14*, P651–P652.

Bracko, O., Cruz, J., K. Vinarcsik, L., Ali, M., Swallow, M., **Zheng, J.**, … Schaffer, C. (2018). High Fat Diet Exacerbates Capillary Stalling in Alzheimer's Disease-related Pathology in the APP/PS1 Mice Model. *Alzheimer’s & Dementia*, *14*, P749–P750.