



Xiaoyue Zhu

Neuroscience Ph.D.

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 xiaoyuezhu.github.io

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SKILLS

- Python | NumPy, Pandas, Scikit-learn, TensorFlow, Keras
- R | lme4, ggplot2, dplyr
- Stan | Bayesian modelling
- Machine learning | regression, trees, SVM, neural networks
- SQL
- Git
- MATLAB

CERTIFICATIONS

- Deep Learning Specialization by DeepLearning.AI
- Applied Data Science with Python by University of Michigan
- R Programming by Johns Hopkins University
- The Unix Workbench by Johns Hopkins University
- SQL for Data Science by University of California, Davis
- WSET Level 3 in Wines by Wine & Spirits Education Trust

CONFERENCES

- Cold Spring Harbor Asia Neuroscience Symposium 2019
Poster Presentation
- Society for Neuroeconomics 2021
Talk Presentation

EDUCATION

New York University [August 2016 - Jan 2021](#)

Doctor of Philosophy, Neural Science

“Analyses of decision under risk in rats”

- Key courses include maths tools, Bayesian modelling, machine learning, and causal inference
- Developed and trained rats on behavioral tasks using a customized high-throughput system
- Extracted, analyzed, and visualized complex behavioral data using SQL, R, Python, and MATLAB
- Developed hierarchical Bayesian models for decision making on high-dimensional data
- Performed optogenetic and pharmacological experiments

University of St. Andrews [Sep 2012 - Jun 2016](#)

B.S. Neuroscience with First Class Honors

University of California, Irvine [Sep 2014 - Jun 2015](#)

Exchange Program with 3.87 GPA

EXPERIENCE

New York University | Teaching Assistant

[September - December 2017, New York](#)

- Independently led recitations for Intro to Neural Science
- Gave a lecture on “Neuroscience of Decision-making”

University of St. Andrews | Research Assistant

[September 2015 - April 2016, U.K.](#)

- Investigated motor neuron properties in *Xenopus laevis* using *in vivo* extracellular recording

University of California, Irvine | Research Assistant

[January 2015 - July 2015, Irvine, California](#)

- Assisted a project investigating hippocampal-cortical connections in rodents with virtual reality paradigms

PUBLICATIONS

- Zhu, X., Moller-Mara, J., Dubroqua, S., Bao, C., & Erlich, J. C. (2021). Frontal but not parietal cortex is required for decisions under risk. *bioRxiv*.
- Zhu, X., & Erlich, J. C. (2021). A rodent paradigm for studying perceptual decisions under asymmetric reward. *arXiv preprint arXiv:2112.12278*.
- Li, W. C., Zhu, X., & Ritson, E. (2017). Mechanosensory stimulation evokes acute concussion-like behavior by activating GIRKs coupled to muscarinic receptors in a simple vertebrate. *Eneuro*, 4(2).
- An analysis of decision under risk in mice, rats and humans (*first author, in draft*)