XINLEI LIN

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EDUCATION

New York University   Fall 2019-Present

- Ph.D. candidate in Neural Science

coursework: Math Tools for Neural Science, Bayesian Machine Learning, Advanced Machine Learning, Computational Cognitive Modelling

University of California, San Diego

- B.S/M.S in Biochemistry   Fall 2014 - Winter 2019
                                                         GPA: 3.93/4.00

RESEARCH EXPERIENCE

Weiji Ma Lab, NYU   2020.9-present
Advisor: Weiji Ma, Professor of Center for Neural Science, NYU
• Project 1: Compare the learning and planning mechanisms of Alpha-Zero type Deep Reinforcement Learning agents and humans in a board game with intermediate complexity
• Project 2: Improve the efficiency of an unbiased log-likelihood estimation method using optimal allocations in inverse binomial sampling
• Project 3: Discover the latent factors and generalizability of complex planning decisions in humans

Eero Simoncelli Lab, NYU   2019.12-2020.8
Advisor: Eero Simoncelli, Professor of Center for Neural Science, NYU
• Used Hidden Markove Model to study the context-dependent representation of Visual Cortex

Christine Constantinople Lab, NYU   2019.9-2019.12
Advisor: Christine Constantinople, Assistant Professor of CNS, NYU
• Developed behavioral analysis pipeline by training a convolutional neural network, deepLabCut, to track head angles of rats to infer regret in reward-associated behavior

Takaki Komiyama Lab, UCSD   2017.1-2019.6
Advisor: Takaki Komiyama, Professor of neuroscience, UCSD

• Led 2-photon imaging investigation of corticotriatal projection in innate and skilled movements

• Analyzed large amount of neural population data from calcium imaging to decode population activities of distinct pathways and to investigate functional differences and information segregation center of corticostriatal neuron types

PUBLICATIONS AND CONFERENCES

X. Lin.*, Z.Zheng.*, J.Topping**.*,** W.Ma,
Comparing Machine and human learning in a planning task of intermediate complexity (Proceedings of the Annual Meeting of the Cognitive Science Society 2022; The Multi-disciplinary Conference on Reinforcement Learning and Decision Making**)**

Liu, H., **Lin, X**., O'Neil, K., DeViso, M., Turner, M., Arroyo, O., Lilascharoen, V., Lim, B.K., and Komiyama, T. **Target Cell-Type Specificity of Corticostriatal Activity** (2022, paper in preparation)

M. Turner., H. Liu, **X. Lin.*,** M. DeViso*, V. Lilascharoen, B, Lim, T. Nguyen, T, Komiyama
Circuit and Behavioral Investigation via Optogenetic Manipulation in Target-Cell-Type-Defined Corticostriatal Pathways (2018, poster in UCSD Honors Research Showcase)

SKILLS

- Analysis of large datasets through various statistical methods
- Model fitting and model comparison
- Reinforcement learning and planning
- Train and analyze deep learning models
- Bayesian statistics
- Programming skills: Python, Julia, Matlab, Html and Javascript

TEACHING EXPERIENCE

Teaching Assistant for Brain and Behavior, NYU	2021.1-2021.5
Teaching Assistant for general chemistry, UCSD	2018.3-2018.7