

- EDUCATION** | **HARVARD UNIVERSITY**, CAMBRIDGE, MA 2018 –
Ph.D. in Neuroscience
- RICE UNIVERSITY**, HOUSTON, TX 2014 – 2018
B.A. in Cognitive Sciences with Honors
Minors in Neuroscience, Computational and Applied Mathematics
Distinction in Research and Creative Work, Thesis: *Multisensory context warps time perception*
- AWARDS & HONORS** |
- Center for Brains, Minds, and Machines (CBMM) Summer School 2019
 - National Science Foundation Graduate Research Fellowship 2018 – 2021
 - Phi Beta Kappa National Honor Society 2018
 - Rice University Student-Taught Course (STC) Teaching Award 2017
 - Cognitive Computational Neuroscience student travel award 2017
 - Janelia Undergraduate Scholars Program Fellowship 2017
 - Barry M. Goldwater Scholarship honorable mention 2017
 - Center for Sensorimotor Neural Engineering (CSNE) NSF-REU Fellowship 2016
 - Computational and Systems Neuroscience (Cosyne) undergraduate travel award 2016
 - Rice Undergraduate Scholars Program thesis grant 2016 – 2018
- RESEARCH** | **HARVARD UNIVERSITY**, CAMBRIDGE, MA JUN 2019 –
Department of Psychology
Advisor: Samuel Gershman
- Developing and empirically testing resource-rational models of behavior with applications to decision-making, habitual and goal-directed learning, and computational psychiatry.
- MARINE BIOLOGICAL LABORATORY**, WOODS HOLE, MA AUG 2019
Center for Brains, Minds, and Machines (CBMM) Summer School
- Investigated the emergence of representational specificity during continual learning in CNNs.
- BAYLOR COLLEGE OF MEDICINE**, HOUSTON, TX JAN 2015 – JUN 2018
Department of Neuroscience
Advisor: Jeffrey Yau
- Developed Bayesian inference models and designed behavioral experiments to understand how context influences time perception across the senses.
- JANELIA RESEARCH CAMPUS**, ASHBURN, VA SUMMER 2017
Janelia Undergraduate Scholars Program
Advisor: Joshua Dudman
- Used *in-vivo* neural recordings to understand how the motor cortex and striatum represent the kinematics of motor behaviors during reward-seeking actions.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY**, CAMBRIDGE, MA SUMMER 2016
Center for Sensorimotor Neural Engineering NSF-REU, McGovern Institute for Brain Research
Advisor: Mehrdad Jazayeri
- Developed Bayesian inference models and designed behavioral experiments to understand the role of memory in sensorimotor control.

- PUBLICATIONS** | Gershman, S.J., **Lai, L.** (2021). The reward-complexity trade-off in schizophrenia. *Computational Psychiatry*.
- Lai, L.**, Gershman, S.J. (2021). Policy compression: an information bottleneck in action selection. *Psychology of Learning and Motivation, Volume 74*.
- Bhui, R., **Lai, L.**, Gershman, S.J. (2021). Resource-rational decision making. *Current Opinion in Behavioral Sciences*.
- Mikhael, J.G, **Lai, L.**, Gershman, S.J. (2021). Rational inattention and tonic dopamine. *PLOS Computational Biology*.
- Lai, L.**, Magnotti, J.F., Yau, J.M. (in prep). Conditioned inference explains multisensory time distortions.
- Lai, L.**, Magnotti, J.F., Yau, J.M. (2017). Multisensory context warps time perception. *Conference on Cognitive Computational Neuroscience*.
- INVITED TALKS** | **From Neuroscience to Artificially Intelligent Systems (NAISys)**, CSHL, NY NOV 2020
A computational division of labor for motor skill learning. (Virtual)
- Computational Principles of Intelligence Lab**, MPI Tübingen, Germany SEP 2020
The reward-complexity tradeoff explains habit formation in free-operant conditioning. (Virtual)
- CONFERENCE ABSTRACTS** | **Lai, L.**, Dudman, J.T. Neural correlates of action kinematics in the dorsal striatum. *Janelia Undergraduate Scholars Symposium 2017, Ashburn, VA*.
- Lai, L.**, Magnotti, J.F., Yau, J.M. Contextual determinants of cue binding or separation in multisensory time perception. *International Multisensory Research Forum (IMRF) 2017, Nashville, TN*.
- Lai, L.**, Yau, J.M. Attractive and repulsive multisensory interactions in time perception. *Society for Neuroscience (SfN) 2016, San Diego, CA*.
- Lai, L.**, Jazayeri, M. Characterizing variability in memory recall of time intervals. *Center for Sensorimotor Neural Engineering (CSNE) REU Symposium 2016, Seattle, WA*.
- TEACHING** | **Course Development & Lead Instructor**
Courses that I have designed (curriculum, problem sets, etc.) and taught.
- NB314QC / NB212: MATH TOOLS FOR NEUROSCIENCE** JAN 2020, F 2020
Department of Neurobiology, Harvard Medical School
- o Designed and taught a new J-term course for the Neuroscience Ph.D. program curriculum. Topics include fundamentals of linear algebra, probability theory, statistical estimation and inference in neural circuits, and analysis of neural population data.
 - o Converted to a full-semester curriculum and added as the foundational course for the Certificate in Computational Neuroscience (F2020).
- COLL158: HOW MUSIC PLAYS THE BRAIN** S 2017, F 2017, S 2018
Rice University
- o Designed and taught a seminar course on the intersection of music and neuroscience. Topics include the neurobiology of music perception and cognition, music therapy, AI and music, etc. Recipient of the 2017 Rice Student-Taught Course Award!
- Teaching Assistantships**
Designed / graded problem sets, led recitations / discussions, and proctored exams.
- TEACHING FELLOW, Harvard University**
- o GenEd1125: Artificial and Natural Intelligence S 2021
 - o NB212: Math Tools for Neuroscience F 2020
 - o NB306QC: Quantitative Methods for Biologists AUG 2020
 - o NB316QC: Probabilistic Modeling of Neural Data S 2020
- TEACHING ASSISTANT, Computational and Systems Neuroscience Conference** MAR 2019

TEACHING (CONT'D)	TEACHING ASSISTANT, <i>Rice University</i>	
	○ NEUR/PSYC 362: Cognitive Neuroscience	S 2016, S 2017, S 2018
	○ NEUR/CAAM 416: Neural Computation	S 2018
	○ NEUR/BIOC 385: Cellular and Molecular Neuroscience	F 2016
	○ STAT 310: Probability and Statistics	F 2016
	○ PSYC 203: Cognitive Psychology	F 2015

OUTREACH &SERVICE	STEM Outreach	
	Teaching / mentoring high school students from traditionally underserved and underrepresented backgrounds.	
	HPREP Teaching and Mentoring Team , Harvard Medical School	2018 –
	BrainSTEM , KIPP Sunnyside High School, Houston, TX	2015 – 2017
	Splash , Rice University	2017

Academic Mentoring

Advising for research internship, graduate school, and fellowship applications.

Summer Harvard Undergraduate Research Program (SHURP) Mentor , Harvard University	2021 –
Mind, Brain, Behavior (MBB) Graduate Student Mentor , Harvard University	2019 –
Alumni Externship Advisor , Rice University	2018 –
Head Academic Fellow , Lovett College, Rice University	2016 – 2018

Research Mentoring

Ann Huang , Summer Intern, McGill University	2021
Lily Zheng , Neuroscience Rotation Student	2021
Varshini Subramanian , Thomas Jefferson High School Student	2020 – 2021
Danielah Samson , HPREP, Boston Latin Academy High School Student	2020 – 2021
Emma Rogge , Harvard Undergraduate	2020

Peer Reviewing

NeurIPS Biological and Artificial Reinforcement Learning Workshop
Cognitive Science Society

LEADERSHIP &PROFESSIONAL	Founder, “Listening Lab” Forum , Harvard Dept. of Neurobiology	2020 –
	Committee on Diversity and Inclusion , Harvard Dept. of Neurobiology	2020 –
	Harvard Graduate Women in Science and Engineering (HGWISE) , Harvard University	2018 –
	Conference Organizer , Exploring the Mind through Music Conference, Rice University	2016

SKILLS &OTHER	Programming: Python, MATLAB, Javascript, HTML/CSS, PyTorch, Tensorflow
	Interests: classical music, philosophy of science and religion, poetry, long-distance running, coffee