

EDUCATION	<b>HARVARD UNIVERSITY</b> , CAMBRIDGE, MA	2018 –
	Ph.D. in Neuroscience	
	<b>RICE UNIVERSITY</b> , 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: <i>Multisensory context warps time perception</i>	
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	<b>HARVARD UNIVERSITY</b> , CAMBRIDGE, MA	JUN 2019 –
	<i>Department of Psychology</i> Advisor: Samuel Gershman	
	<ul style="list-style-type: none"> <li>Developing and empirically testing resource-rational models of behavior with applications to decision-making, habitual and goal-directed learning, and computational psychiatry.</li> </ul>	
	<b>MARINE BIOLOGICAL LABORATORY</b> , WOODS HOLE, MA	AUG 2019
	<i>Center for Brains, Minds, and Machines (CBMM) Summer School</i>	
	<ul style="list-style-type: none"> <li>Investigated the emergence of representational specificity during continual learning in CNNs.</li> </ul>	
	<b>BAYLOR COLLEGE OF MEDICINE</b> , HOUSTON, TX	JAN 2015 – JUN 2018
	<i>Department of Neuroscience</i> Advisor: Jeffrey Yau	
	<ul style="list-style-type: none"> <li>Developed Bayesian inference models and designed behavioral experiments to understand how context influences time perception across the senses.</li> </ul>	
	<b>JANELIA RESEARCH CAMPUS</b> , ASHBURN, VA	SUMMER 2017
	<i>Janelia Undergraduate Scholars Program</i> Advisor: Joshua Dudman	
	<ul style="list-style-type: none"> <li>Used <i>in-vivo</i> neural recordings to understand how the motor cortex and striatum represent the kinematics of motor behaviors during reward-seeking actions.</li> </ul>	
	<b>MASSACHUSETTS INSTITUTE OF TECHNOLOGY</b> , CAMBRIDGE, MA	SUMMER 2016
	<i>Center for Sensorimotor Neural Engineering NSF-REU, McGovern Institute for Brain Research</i> Advisor: Mehrdad Jazayeri	
	<ul style="list-style-type: none"> <li>Developed Bayesian inference models and designed behavioral experiments to understand the role of memory in sensorimotor control.</li> </ul>	

**PUBLICATIONS** | **Lai, L.**, Gershman, S.J. (submitted). Policy compression: an information bottleneck in action selection. *Psychology of Learning and Motivation, Volume 74*.

Bhui, R., **Lai, L.**, Gershman, S.J. (submitted). Resource-rational decision making. *Current Opinion in Behavioral Sciences*.

Gershman, S.J., **Lai, L.** (in review). The reward-complexity trade-off in schizophrenia. *bioRxiv*.

Mikhael, JG, **Lai, L.**, Gershman, S.J. (in press). Rational inattention and tonic dopamine. *PLOS Computational Biology*.

**Lai, L.**, Magnotti, JF., Yau, JM. (in prep). Conditioned inference explains multisensory time distortions.

**Lai, L.**, Magnotti, JF., Yau, JM. (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, JF., Yau, JM. Contextual determinants of cue binding or separation in multisensory time perception. *International Multisensory Research Forum (IMRF) 2017, Nashville, TN*.

**Lai, L.**, Yau, JM. 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*

- 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.
- 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*

- 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*

- NB316QC: Probabilistic Modeling of Neural Data S 2020
- NB306QC: Quantitative Methods for Biologists AUG 2020
- NB212: Math Tools for Neuroscience F 2020
- GenEd1125: Artificial and Natural Intelligence S 2021

**TEACHING ASSISTANT**, *Computational and Systems Neuroscience Conference* MAR 2019

- Led tutorial exercises on the Bayesian modeling of behavior.

<b>TEACHING (CON'T)</b>	<b>TEACHING ASSISTANT, <i>Rice University</i></b>	
	○ 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
<b>OUTREACH &amp;SERVICE</b>	<b>STEM Outreach</b>	
	Teaching / mentoring high school students from traditionally underserved and underrepresented backgrounds.	
	<b>HPREP Teaching and Mentoring Team</b> , Harvard Medical School	2018 –
	<b>BrainSTEM</b> , KIPP Sunnyside High School, Houston, TX	2015 – 2017
	<b>Splash</b> , Rice University	2017
	<b>Academic Mentoring</b>	
	Advising for research internship, graduate school, and fellowship applications.	
	<b>Mind, Brain, Behavior (MBB) Graduate Student Mentor</b> , Harvard University	2019 –
	<b>Alumni Externship Advisor</b> , Rice University	2018 –
	<b>Head Academic Fellow</b> , Lovett College, Rice University	2016 – 2018
	<b>Research Mentoring</b>	
	<b>Varshini Subramanian</b> , Thomas Jefferson High School Student	2020 –
	<b>Emma Rogge</b> , Harvard Undergraduate	2020
<b>LEADERSHIP &amp;PROFESSIONAL</b>	<b>Peer Reviewing</b>	
	<b>NeurIPS Biological and Artificial Reinforcement Learning Workshop</b>	2019, 2020
	<b>Founder, “Listening Lab” Forum</b> , Harvard Dept. of Neurobiology	2020 –
	<b>Committee on Diversity and Inclusion</b> , Harvard Dept. of Neurobiology	2020 –
	<b>Harvard Graduate Women in Science and Engineering (HGWISE)</b> , Harvard University	2018 –
	<b>Conference Organizer</b> , Exploring the Mind through Music Conference, Rice University	2016
<b>SKILLS &amp;OTHER</b>	<b>Programming:</b> Python, MATLAB, Javascript, HTML/CSS, PyTorch, Tensorflow	
	<b>Interests:</b> classical music, philosophy of science and religion, poetry, long-distance running, coffee	