

Brains, Minds and Machines Summer Course 2025				Italics = invited		Underlined = confirmed										
				Morning				Afternoon								
MBL Rooms Reserved				9:15 - 10:30	10:30 - 10:45	10:45 - 12:00	12:00 - 1:30	1:30 - 2:45	2:45 - 3:00	3:00 - 4:15	4:30 - 5:45	6:00 - 8:00	8:00 - 9:00	9pm on	LEGEND	
	Aug-3	Sunday		Student/staff move in								Dinner				Lecture
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-4	Monday		MBL Orientation [5 minutes]. Tommy Poggio + Gabriel Kreiman: Introduction to BMM and the summer course	BREAK	TA introductions and contact info	LUNCH	Student introductions	BREAK	Student introductions	Student introductions	Welcome reception 6pm - 9pm Swope Lower Terrace	Welcome reception 6pm - 9pm Swope Lower Terrace	Welcome reception 6pm - 9pm Swope Lower Terrace		Seminar Talk: Lillie Auditorium
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-5	Tuesday		Tutorial: Math, programming, and statistical learning (Yehonatan, Morgan)	BREAK	Tutorial: Signal Processing (Taylor)	LUNCH	Tutorial: Introduction to Neuroscience (Hector)	BREAK	Tutorial: Intro to Deep learning (Morgan)	Project introductions	Dinner	MCN/BMM Joint Lecture. Eero Simoncelli Location: Speck Auditorium	MCN/BMM Joint Lecture. Eero Simoncelli		Seminar Talk
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-6	Wednesday		Jim DiCarlo: Visual recognition in primates	BREAK	Jim DiCarlo: Visual recognition in primates	LUNCH	Tutorial: Deep learning hands on (Brian, Vighnesh)	BREAK	Tutorial: Statistics and Data Analysis (Taylor)	Tutorial: Reinforcement Learning (Morgan, Brian)	Dinner	Project introductions	Project introductions		Panel Discussion
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-7	Thursday		Gabriel Kreiman: The brain's operating system	BREAK	Gabriel Kreiman: The brain's operating system	LUNCH	Tutorial: Intro to Program Synthesis with LLMs (Colin)	BREAK	Tutorial: Intro to Language Models and Multimodal models (Vighnesh, Anitej)	Tutorial: Computational models of visual attention (Mengmi, Lucia)	Dinner	Jeff Lichtman: Connectomics At The Nano- and Petascale	Reception @ Swope Upper Terrace		Tutorial (Loeb 108)
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-8	Friday		Tutorial: Theory of Deep Learning (Yehonatan)	BREAK	Tutorial: Physiological Closed-Loop Control (Taylor)	LUNCH	Tutorial: Deep Generative Models - Session 1 (Guy)	BREAK	Tutorial: Deep Generative Models - Session 2 (Guy)	Tutorial: Deep Generative Models - Session 3 (Guy)	Dinner	Project discussion	Project work time		Project (Loeb 108)
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-9	Saturday	<b>Theory Workshop</b>	Theories of learning, creativity and reasoning in neural networks Speaker: Prof. Surya Ganguli, Stanford University	BREAK	Universal Phenomena, Irreversibility, and Thermodynamics in Deep Representation Learning Speaker: Dr. Liu Ziyin, MIT / NTT Research	LUNCH	How Reinforcement Learning Improves Mathematical Reasoning in Language Models Speaker: Dr. Eran Malach, Harvard University	BREAK	Self-Supervised Contrastive Learning = Supervised Contrastive Learning Speaker: Prof. Tomer Galanti, Texas A&M University	Project work time	Dinner	Project work time	Reception @ Swope Upper Terrace		Social (location TBD)
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-10	Sunday	<b>Theory Workshop</b>	Learning without Backprop: Emergent Computation with Assemblies of Neurons Speaker: Prof. Santosh Vempala, Georgia Institute of Technology	BREAK	Risk and cross validation in ridge regression with correlated samples Speaker: Dr. Jacob Zavatone, Harvard University	LUNCH	Understanding Representational Alignment in Vision and Beyond Speaker: Prof. Philip Isola	BREAK	Panel Discussion: ML and neuroscience: common principles of intelligence Moderator: Prof. Tomaso Poggio, MIT Panelists: Dr. Brian Cheung, MIT; Dr. Daniel Mitropolsky, MIT; Prof. Akshay Rangamani, NJIT; Prof. Mengjia Xu, NJIT; Dr. Jacob Zavatone, Harvard	Project work time	Dinner	Project work time	Project work time		Activity
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-11	Monday		Matt Wilson: Hippocampal mechanisms of memory and cognition	BREAK	Matt Wilson: Hippocampal mechanisms of memory and cognition	LUNCH	Ethics discussion	BREAK	Project work time	Emery Brown: Deciphering the Dynamics of the Unconscious Brain Under General Anesthesia [zoom]	Dinner	Project work time	Project work time		Zoom Talk
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-12	Tuesday		Marge Livingstone (online): Maps, maps, maps	BREAK	Project work time	LUNCH	Project work time	BREAK	Project work time	Project work time	Dinner	Christof Koch (online): The Biology of Consciousness and its Implications for Machine Consciousness?	Project work time		
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-13	Wednesday		Embodied AI Workshop: Led by Leslie Kaelbling and Vikash Mansinghka	BREAK	Embodied AI Workshop: Led by Leslie Kaelbling and Vikash Mansinghka	LUNCH	Embodied AI Workshop: Led by Leslie Kaelbling and Vikash Mansinghka	BREAK	Embodied AI Workshop: Led by Leslie Kaelbling and Vikash Mansinghka	Project work time	Dinner	Project work time	Project work time		

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Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-14 Thursday	Project work time	BREAK	<i>Ila Fiete: Computational models of the medial temporal lobe</i>	LUNCH	<i>Haim Sompolinsky: Computational Neuroscience</i>	BREAK	<i>Ueli Rutishauser: Neural mechanisms of cognitive flexibility and learning - insights from invasive human recordings</i>	<i>Winrich Freiwald: Faces and social interactions</i>	Dinner	Joint MCN/BMM debate on AI and Neuroscience: Panelists: <i>Ann Hermundstad, Bob Datta, Ila Fiete, Jascha Sohl-Dickstein, Thomas Serre, Haim Sompolinsky, Tomaso Poggio</i> . Moderators: Roozbeh Kiani, Stefano Fusi and Gabriel Kreiman	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-15 Friday	Project work time	BREAK	<i>Jascha Sohl-Dickstein: Advice for a (young) investigator in the first and last days of the Anthropocene</i>	LUNCH	<i>Thomas Serre: What are the computations underlying primate versus machine vision?</i>	BREAK	Project work time	Project work time	Dinner	<i>Philip Nelson and Michael Brenner: applied machine learning for science (Speck auditorium)</i>	Watch Bioluminescence (Stony beach)			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-16 Saturday	Project work time	BREAK	Project work time	LUNCH	Project work time	BREAK	Project work time	Project work time	Dinner	Project work time	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-17 Sunday *Falmouth Foot Race	Project work time	BREAK	Project work time	LUNCH	<i>Josh Tenenbaum (plan B: zoom; plan C: past year lec recording)</i>	BREAK	<i>Josh Tenenbaum (plan B: zoom; plan C: past year lec recording)</i>	<i>Sam Gershman</i>	Dinner	Movie Night (Speck Auditorium)	Movie Night (Speck Auditorium)			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-18 Monday	Martha's Vineyard Trip							Return from Martha's Vineyard	Dinner	Project work time	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-19 Tuesday	Team Challenge - Boat building (tent outside Loeb, Ko, Taylor, and Morgan are in charge)	BREAK	Team Challenge - Boat building (tent outside Loeb)	LUNCH (venue: tent outside Loeb)	Team Challenge - Boat competition (Stony beach)	BREAK	Team Challenge - Boat competition (Stony beach)	Project work time	Dinner	Project work time	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-20 Wednesday	<i>Alumni Day: Will Xiao, Kohitij Kar</i>	BREAK	Project work time	LUNCH Swope Terra	<i>Alumni Day: Carlos Ponce, Bill Lotter, Arjun Bansal [Zoom]</i>	BREAK	<i>Alumni Day: SuYeon Chung, Colin Conwell</i>	Project work time	Dinner	Alumni Day Reception - Meigs room	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-21 Thursday	<i>Ellie Pavlick: LLMs and cognitive models</i>	BREAK	<i>Josh McDermott: auditory perception</i>	LUNCH	<i>Greta Tuckute: Language in the Brain and Large Language Models</i>	BREAK	<i>Stefanie Tellex: Robotics</i>	Project work time	Dinner	Project work time	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-22 Friday	Student Presentations ( <a href="#">schedule here</a> )	BREAK	Student Presentations	LUNCH	Student Presentations	BREAK	Student Presentations	Student Presentations	Dinner	Project work time	Project work time			
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 306 Kitchen: Loeb 302	Aug-23 Saturday	Student Presentations ( <a href="#">schedule here</a> )	BREAK	Student Presentations	LUNCH	Student Presentations	BREAK	Student Presentations	Student Presentations	Closing Reception 6-9pm Swope Upper Terrace					
	Aug-24 Sunday	Student/Staff Move out		Bike pickup 11am											