

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	
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-7	Friday	Student/staff move in									Dinner	Dinner		Lecture
	Aug-8	Saturday	MBL Orientation (5 minutes): Tommy Poggio + Gabriel Kreiman: Introduction to BMM and the summer course	BREAK		Student introduction (2-min per student)	LUNCH	Student introductions (speed-dating-like icebreaking)	BREAK	Research project introductions (all TAs)	Research project introductions (all TAs)	Dinner	Dinner	Welcome reception 6pm - 9pm Swope Lower Terrace	Seminar Talk: Lillie Auditorium
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-9	Sunday	Tutorial: Intro to Statistics (Colin Conwell, Yehonatan Avidan)	BREAK	Tutorial: Intro to Neuroscience (Hector Luis Penagos-Vargas, Gasser Elbanna)	LUNCH	Tutorial: Intro to Deep learning, LLMs, and VLMs (Christopher Wang, Danai G. Sakellidou, and Vighnesh Subramaniam)	BREAK	Tutorial: Intro to Psychophysics (Michael Lee, Shlyf Tregler)	Tutorial: Program synthesis (Colin Conwell)		Dinner	TBD between tutorials and project introductions	TBD between tutorials and project introductions	Seminar Talk
	Aug-10	Monday	Tutorial: Computational models of vision (Mengxi Zhang, Yen-ling Kuo)	BREAK	Tutorial: Computational models of language (Emily Cheng, Gasser Elbanna)	LUNCH	Tutorial: Science of deep learning (Brian Cheung + Vighnesh Subramaniam)	BREAK	Tutorial: Representational alignment in developmental psychology (Shlyf Tregler, Michael Lee, Colin Conwell)	Tutorial: State space models (Danai G. Sakellidou)		Dinner	Project introductions	Project introductions	Panel Discussion
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-11	Tuesday	Gabriel Kreiman: The brain's operating system	BREAK	Gabriel Kreiman: The brain's operating system	LUNCH	Tutorial: Diffusion models and flowmatching (David Mayo)	BREAK	Thomas Serre: TBD	Sam Gershman: TBD		Dinner	Jeff Lichtman: Connectomes At The Nano- and Petascale	Reception @ Swope Upper Terrace	Tutorial (Loeb 108)
	Aug-12	Wednesday	Tutorial: Agentic AI for science (Kushagra Tiwary, Brian Cheung, David Mayo)	BREAK	Tutorial: Reinforcement learning + robotics (Yen-Ling Kuo, Brian Cheung)	LUNCH	Tutorial: Theory of deep learning (Yehonatan Avidan)	BREAK	Sue Yeon Chung: TBD	Project introductions		Dinner	Project introductions	Project work time	Project (Loeb 108)
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-13	Thursday	Jim DiCarlo: Visual recognition in primates	BREAK	Jim DiCarlo: Visual recognition in primates	LUNCH	Project work time	BREAK	Project work time	Project work time		Dinner	MCN/BMM Joint Lecture: Prof Surya Ganguli Location: TBD	Reception @ Swope Upper Terrace	Social (location TBD)
	Aug-14	Friday	Theory Workshop: Workshp confirmed with Tommy speaker: lineup in progress	BREAK	Theories of learning, creativity and reasoning in neural networks Speaker: Prof. Surya Ganguli, Stanford University	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	Project work time	Activity
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-15	Saturday	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 Zavatore, Harvard University	LUNCH	Understanding Representational Alignment in Vision and Beyond Speaker: Prof. Philip Isola	BREAK	Panel Discussion: ML and neuroscience: common principles of intelligence Speaker: Prof. Philip Isola Moderator: Prof. Tomaso Poggio, MIT Panelists: Dr. Brian Cheung, MIT; Dr. Daniel Mitropolsky, MIT; Prof. Akshay Rangamani, NJIT; Prof. Mengxia Xu, NJIT; Dr. Jacob Zavatore, Harvard	Project work time		Dinner	Project work time	Project work time	Zoom Talk
	Aug-16	Sunday	Falmouth Road Race	BREAK	Matt Wilson: Hippocampal mechanisms of memory and cognition	LUNCH	Matt Wilson: Hippocampal mechanisms of memory and cognition	BREAK	Ethics discussion	Stefanie Tellex: Robotics		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 160 Kitchen: Loeb 156	Aug-17	Monday	Project work time	BREAK	Emanuel Rodolakis: Navigating Model Spaces with Less Tax	LUNCH	Darin Comaniciu: TBD	BREAK	Joseph Bates: TBD	Project work time		Dinner	Project work time	Project work time	
	Aug-18	Tuesday	Winnich Freiwald: TBD	BREAK	Ila Fiete: Computational models of the medial temporal lobe	LUNCH	Haim Sompolinsky: Computational Neuroscience	BREAK	David Cox: TBD	Project work time		Dinner	Joint MCN/BMM debate on AI and Neuroscience: Panelists TBD. Moderators: Roozbeh Kiani, Stefano Fusi and Gabriel Kreiman	Project work time	
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-19	Wednesday	Team Challenge - Boat building (tent outside Loeb, Ko, Taylor, and Morgan are in charge)	BREAK	Team Challenge - Boat building (tent outside Loeb)	LUNCH	Team Challenge - Boat competition (Stony beach)	BREAK	Team Challenge - Boat competition (Stony beach)	Josh McDermott: auditory perception		Dinner	Philip Nelson and Michael Brenner: applied machine learning for science (Speck Auditorium)	Watch Bioluminescence (Stony beach)	
	Aug-20	Thursday	Alumni Day: Will Xiao Kohli Kar	BREAK	Alumni Day: SuYeon Chung, Hanlin Tang	LUNCH	Alumni Day: Bill Lotter, Arjun Bansal (Zoom)	BREAK	Project work time	Project work time		Dinner	Alumni Day Reception - Meigs room	Project work time	
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-21	Friday	Martha's Vineyard Trip							Return from Martha's Vineyard		Dinner	Movie Night (Speck Auditorium)	Movie Night (Speck Auditorium)	
	Aug-22	Saturday	Project work time	BREAK	Marge Livingstone: Maps, maps, maps	LUNCH	Grata Tuckute: Language in the Brain & Large Language Models	BREAK	Project work time	Project work time		Dinner	Project work time	Project work time	
Lecture: Lillie (9AM-5:30PM) Main Lab: Loeb 160 Kitchen: Loeb 156	Aug-23	Sunday	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	
	Aug-24	Monday	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 160 Kitchen: Loeb 156	Aug-25	Tuesday	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	
	Aug-26	Wednesday	Student Presentations (schedule here)	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 160 Kitchen: Loeb 156	Aug-27	Thursday	Student Presentations (schedule here)	BREAK	Student Presentations	LUNCH	Student Presentations	BREAK	Student Presentations	Student Presentations		Closing Reception 6-9pm Swope Upper Terrace			
	Aug-28	Friday	Student/Staff Move out		Bike pickup 11am										