

Saurabh Vyas, Ph.D.

Contact Information	Mellon Institute, 4400 Fifth Ave, Pittsburgh, PA 15213 https://www.cmu.edu/ni/logic	
Professional Experience	Carnegie Mellon University , Pittsburgh, PA 2026 – Assistant Professor Neuroscience Institute Biomedical Engineering (courtesy) Columbia University , New York, NY 2020 – 2025 Postdoctoral Research Fellow Mortimer B. Zuckerman Mind Brain Behavior Institute Advisor: Mark M. Churchland Co-mentor: Michael N. Shadlen Applied Physics Laboratory , Laurel, MD 2011 – 2014 Systems Engineer Intelligent Systems & Robotics Group	
Education	Stanford University , Stanford, CA 2014 – 2020 Ph.D. in Bioengineering Thesis: “Neural population dynamics underlying motor learning” Advisor: Krishna V. Shenoy Donald B. Lindsley Prize (outstanding thesis award by <i>Society for Neuroscience</i>) Johns Hopkins University , Baltimore, MD 2008 – 2014 M.S.E. in Biomedical Engineering B.S. in Biomedical Engineering B.S. in Electrical Engineering University Honors	
Grants & Fellowships	NIH K99/R00, Pathway to Independence Award (K99NS140554) 2024 NIH F32, Ruth L. Kirschstein National Research Service Award (F32NS124834) 2022 NIH F31, Ruth L. Kirschstein National Research Service Award (F31NS103409) 2017 National Science Foundation IGERT trainee in Mind, Brain, and Computation 2015 Biosciences Travel Grant, Stanford University 2015 National Science Foundation Graduate Research Fellowship 2014 Ric Weiland Graduate Fellowship, Stanford University 2014 Robert C. Byrd Scholarship, State of Maryland 2008 Dorr Family Foundation Scholar, Scholarship for Academic Excellence 2008 Science, Engineering, Apprentice Program Fellow, United States Naval Academy 2008 Science, Engineering, Apprentice Program Fellow, United States Naval Academy 2007	
Awards & Honors	Donald B. Lindsley Prize in Behavioral Neuroscience, Society for Neuroscience 2021 Sammy Kuo Award in Neuroscience (Finalist), Stanford University 2018 Best Talk (1st Place), Stanford Bioengineering Retreat 2017 Graduated with University Honors, Johns Hopkins University 2012 People’s Choice Award, Medical Device Competition, Rice University 2012 Invention of the Year (Finalist), Johns Hopkins Office of Technology Transfer 2011 Computer Integrated Surgery Project Award, Johns Hopkins University 2011 Merit Scholastic Award, State of Maryland 2008 Distinguished Scholars, State of Maryland 2008 Advanced Placement Scholar with Distinction, CollegeBoard 2008	

Publications

- Trautmann EM, Hesse JK, Stine G, Xia R, Shude Zhu S, O'Shea DJ, Karsh B, Colonell J, Lanfranchi F, **Vyas S**, Zimmik A, Steinmann NA, Wagenaar DA, Andrei A, Lopez CM, O'Callaghan J, Putzeys J, Raducanu BC, Welkenhuysen M, Churchland MM, Moore T*, Shadlen M*, Shenoy KV*, Tsao D*, Dutta B†, Harris T†, "Large-scale high-density brain-wide neural recording in nonhuman primates." *Nature Neuroscience*. (*†equal contribution) 2025
- Verhein JR*, **Vyas S***, Shenoy KV, "Methylphenidate modulates motor cortical dynamics and behavior." *bioRxiv*. (*equal contribution) 2023
- O'Shea DJ*, Duncker L*, Goo W, Sun X, **Vyas S**, Trautmann EM, Diester I, Ramakrishnan C, Deisseroth K, Sahani M†, Shenoy KV†. "Direct neural perturbations reveal a dynamical mechanism for robust computation." *bioRxiv*. (*†equal contribution) 2022
- Sun X*, O'Shea DJ*, Golub MD, Trautmann EM, **Vyas S**, Ryu SI, Shenoy KV, "Cortical preparatory activity indexes learned motor memories," *Nature*. (*equal contribution) 2021
- Al Borno M, **Vyas S**, Shenoy KV, Delp SL, "High-fidelity Musculoskeletal Modeling Reveals that Motor Planning Variability Contributes to the Speed-Accuracy Tradeoff," *eLife*. 2021
- Vyas S**, O'Shea DJ, Ryu SI, Shenoy KV, "Causal role of motor preparation during error-driven learning," *Neuron*. 2020
- Vyas S**, Golub MD, Sussillo D, Shenoy KV, "Computation through neural population dynamics," *Annual Review of Neuroscience*. 2020
- Trautmann EM, Stavisky SD, Lahiri S, Ames KC, Kaufman MT, O'Shea DJ, **Vyas S**, Sun X, Ryu SI, Ganguli S, Shenoy KV, "Accurate estimation of neural population dynamics without spike sorting," *Neuron*. 2019
- Even-Chen N*, Sheffer B*, **Vyas S**, Ryu SI, Shenoy KV, "Structure and variability of delay activity in premotor cortex," *PLoS Computational Biology*. (*equal contribution) 2019
- Vyas S**, Even-Chen N, Stavisky SD, Ryu SI, Nuyujukian P, Shenoy KV, "Neural population dynamics underlying motor learning transfer," *Neuron*. 2018
- Gorini C, Iyer SM, **Vyas S**, Ramakrishnan C, Deisseroth K, Delp SL, "Reversible temporally-specific inhibition of muscle using a light-activated chloride channel," *bioRxiv*. 2018
- Williams A, Kim TH, Wang F, **Vyas S**, Ryu SI, Shenoy KV, Schnitzer ML, Kolda TG, Ganguli S, "Unsupervised discovery of demixed, low-dimensional neural dynamics across multiple timescales through tensor components analysis," *Neuron*. 2018
- Vyas S**, Huang H, Gale J, Sarma S†, Montgomery E†, "Complexity of Dynamics in STN Neuronal Systems is reduced in Parkinson's Disease compared to Epilepsy," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. (†equal contribution) 2016
- Christensen AJ*, Iyer SM*, Francois A, **Vyas S**, Ramakrishnan C, Vesuna S, Deisseroth K, Scherrer G, Delp SL. "In Vivo Interrogation of Spinal Mechanosensory Circuits," *Cell Reports*. (*equal contribution) 2016
- Vyas S**, Meyerle J, Burlina P, "Non-Invasive Estimation of Skin Thickness from Hyperspectral Imaging and Validation using Echography," *Computers in Biology and Medicine*. 2015

	Mendrik A, Vincken K, Kuijff H, Breeuwer M, Bouvy W, Bresser J, Alansary A, Bruijne M, Carass A, El-Baz A, Jog A, Katyal R, Khan A, Lijn F, Mahmood Q, Mukherjee R, Opbroek A, Paneri S, Pereira S, Persson M, Rajchl M, Sarikaya D, Smedby O, Silva C, Vrooman H, Vyas S , Wang C, Zhao L, Biessels G, and Viergever M, "MRBrainS Challenge: Online Evaluation Framework for Brain Image Segmentation in 3T MRI Scans," <i>Computational Intelligence and Neuroscience</i> . 2015
	Mukherjee R, Vyas S , Juang R, Sprouse C, Burlina P, "Endocardial Surface Delineation in 3D Transesophageal Echocardiography," <i>Ultrasound in Medicine and Biology</i> . 2013
	Vyas S , Banerjee A, Burlina P, "Estimating Skin Parameters from Hyperspectral Signatures," <i>Journal of Biomedical Optics</i> . 2013
Peer-reviewed Conference Submissions	O'Shea DJ, Duncker L, Vyas S , Sun X, Sahani, M, Shenoy KV, "Electrical but not optogenetic stimulation drives nonlinear contraction of neural states," Computational and Systems Neuroscience abstract (COSYNE), Lisbon, Portugal. 2022
	O'Shea DJ*, Trautmann EM*, Sun X, Vyas S , Shenoy KV, "Motor cortical neural dynamics are finely spatially intermingled," Computational and Systems Neuroscience abstract (COSYNE), Online. 2021
	Vyas S , O'Shea DJ, Shenoy KV, "Causal role of motor preparation during error-driven learning," Advances in Motor Learning and Motor Control (MLMC), Chicago, I.L. <i>Talk</i> . 2019
	Willett FR, Vyas S , Michaels JA, Henderson JM, Shenoy KV, "Neural network models for closed-loop musculoskeletal arm control," Computational and Systems Neuroscience abstract (COSYNE), Lisbon, Portugal. 2019
	Lahiri S, Trautmann EM, Stavisky SD, Ames KC, Kaufman MT, O'Shea DJ, Vyas S , Sun X, Ryu SI, Ganguli S, Shenoy KV, "Accurate estimation of neural population dynamics without spike sorting," Computational and Systems Neuroscience abstract (COSYNE), Lisbon, Portugal. 2019
	Vyas S , Even-Chen N, Stavisky SD, Ryu SI, Nuyujukian P, Shenoy KV, "Neural population dynamics underlying motor learning transfer," Computational and Systems Neuroscience abstract (COSYNE), Denver, CO. 2018
	Vyas S , Even-Chen N, Stavisky SD, Ryu SI, Nuyujukian P, Shenoy KV, "Neural population dynamics underlying covert-to-overt motor learning transfer," Advances in Motor Learning and Motor Control (MLMC), Washington D.C. <i>Talk</i> . 2017
	Williams A, Kim TH, Wang F, Vyas S , Ryu SI, Shenoy KV, Schnitzer ML, Kolda TG, Ganguli S, "Dimension reduction of multi-trial neural data by tensor decomposition," Computational and Systems Neuroscience abstract (COSYNE), Salt Lake City, UT. <i>Talk</i> . 2017
	Vyas S , Christensen AJ, Mitelut C, Iyer SM, Gratiy S, Delp SL, Anastassiou C, "A point process approach to inferring connectivity from biophysical simulations of Ca2+ fluorescence," Computational and Systems Neuroscience abstract (COSYNE), Salt Lake City, UT. 2016
	Vyas S , Gammie J, Burlina P, "Computing Cardiac Strain from Variational Optical Flow in Four-Dimensional Echocardiography," IEEE CBMS: Computer-based Medical Systems. <i>Talk. Finalist - Best Student Paper Award</i> 2014

	Vyas S , Meyerle J, Burlina P, “Cross Validating Hyperspectral with Ultrasound-based Skin Thickness Estimation,” IEEE Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (IEEE WHISPERS).	2014
	Vyas S* , Burlina P, Kleissas D, Mukherjee R*, “Automated Walks using Machine Learning for Segmentation,” International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Grand Challenge on MR Brain Segmentation (MR-Brains13). <i>Talk</i> . (*equal contribution)	2013
	Vyas S , Banerjee A, Burlina P, “Machine Learning Methods for In Vivo Skin Parameter Estimation,” IEEE CBMS: Computer-based Medical Systems.	2013
	Vyas S , Mukherjee R, Sosa F, Burlina P, “Endocardium Segmentation in 3D Transesophageal Echocardiography,” IEEE ISBI: International Symposium on Biomedical Imaging: From Nano to Macro.	2013
	Vyas S , Banerjee A, Garza L, Kang S, Burlina P, “Hyperspectral Signature Analysis of Skin Parameters,” SPIE-MI: Proceedings of SPIE Medical Imaging. <i>Talk</i> .	2013
	Peterson E, Mukherjee R, Vyas S , Cornish D, “Galaxy: Link Space Visualization and Analysis of Network Traffic,” IEEE Visual Analytics in Science & Technology (VAST-MC3). Honorable Mention – “Intriguing Visualization”	2013
	Vyas S* , Su S*, Kim R*, Kuo N, Taylor RH, Kang J, Boctor EM, “Intraoperative Ultrasound to Stereocamera Registration using Interventional Photoacoustic Imaging,” SPIE-MI: Proceedings of SPIE Medical Imaging. (*equal contribution)	2012
Conference Abstracts	Vyas S , Fakhoury T, Trautmann EM, Liwtin-Kumar A, Shadlen MS, Churchland MM, “Neural population geometry during flexible deductive reasoning,” Society for Neuroscience, Chicago, I.L.	2024
	Vyas S , Fakhoury T, Trautmann EM, Liwtin-Kumar A, Shadlen MS, Churchland MM, “Neural population geometry during flexible deductive reasoning,” Simian Collective, Pittsburgh, P.A. Selected for a Poster Teaser .	2024
	Vyas S , Fakhoury T, Trautmann EM, Liwtin-Kumar A, Shadlen MS, Churchland MM, “Neural population geometry during flexible deductive reasoning,” Neurobiology of Cognition Gordon Research Conference, Waterville Valley, New Hampshire.	2024
	Vyas S , Trautmann EM, Fakhoury T, Liwtin-Kumar A, Shadlen MS, Churchland MM, “Hierarchical division of labor during cognitive-motor sequences,” Neural Control of Movement, Dubrovnik, Croatia.	2024
	O’Shea DJ, Trautmann EM, Sun X, Vyas S , Shenoy KV, “Spatial microstructure of motor cortical neural dynamics,” Neural Control of Movement, Dubrovnik, Croatia.	2024
	O’Shea DJ, Trautmann EM, Sun X, Vyas S , Shenoy KV, “Spatial microstructure of motor cortical neural dynamics,” Society for Neuroscience, Washington D.C.	2023
	O’Shea DJ, Duncker L, Sun X, Vyas S , Deisseroth, K, Sahani, M, Shenoy KV, “Optogenetic and electrical perturbations in motor cortex reveal a neural population mechanism for robust computation,” Society for Neuroscience, San Diego, C.A.	2022

- Willett F, **Vyas S**, Michaels JA, Henderson JM, Shenoy KV, “Feedback control dynamics explain motor cortical activity,” Society for Neuroscience, Virtual. 2021
- O’Shea DJ, Trautmann EM, Sun X, **Vyas S**, Shenoy KV, “High-density silicon probes reveal signatures of neural circuit organization in motor cortical dynamics.” Neural Control of Movement, Online. 2021
- Vyas S**, O’Shea DJ, Ryu SI, Shenoy KV, “Causal role of motor preparation during error-driven learning,” Society for Neuroscience, Chicago, I.L. 2019
- Verhein JR*, **Vyas S***, Shenoy KV, “Towards a neural population-level understanding of the effects of methylphenidate (Ritalin) in motor cortex of reaching monkeys,” Society for Neuroscience, Chicago, I.L. (*equal contribution) 2019
- Trautmann EM, O’Shea DJ, Sun X, **Vyas S**, Ryu SI, Shenoy KV, “Spatially heterogeneous tuning in rhesus motor cortex revealed using neuropixels probes,” Society for Neuroscience, Chicago, I.L. 2019
- Deo DR, Willett FR, Avansino DT, **Vyas S**, Even-Chen N, Hochberg LR, Henderson JM, Shenoy KV, “Neural representation of attempted movement of a paralyzed limb in a person, and implications for intracortical brain-computer interfaces,” Society for Neuroscience, Chicago, I.L. 2019
- Sun X, O’Shea DJ, Trautmann EM, Golub MD, **Vyas S**, Fisher TG, Ryu SI, Shenoy KV, “Changes in neural population activity underlying the learning of novel arm dynamics,” Society for Neuroscience, Chicago, I.L. 2019
- Verhein JR*, **Vyas S***, Shenoy KV, “Towards a neural population-level understanding of the effects of methylphenidate (Ritalin) in motor cortex of reaching monkeys,” Neural Control of Movement, Toyama, Japan. (*equal contribution) 2019
- Sun X, O’Shea DJ, Trautmann EM, Golub MD, **Vyas S**, Fisher TG, Ryu SI, Shenoy KV, “Exploration of distinct neural activity repertoire during learning of new arm dynamics,” Neural Control of Movement, Toyama, Japan. 2019
- Vyas S**, O’Shea DJ, Trautmann EM, Willett FR, Shenoy KV, “Motor cortical preparatory activity is causally involved in visuomotor learning,” Society for Neuroscience, San Diego, C.A. 2018
- Trautmann EM, O’Shea DJ, **Vyas S**, Shenoy KV, “Recording large populations of neurons with single-cell resolution in nonhuman primates using Neuropixels,” Cell-NERF Symposium: Neurotechnologies, Leuven, Belgium. 2018
- Even-Chen N, Sheffer B, **Vyas S**, Ryu SI, Shenoy KV, “Spatial encoding of reaches in preparatory motor cortical activity,” Neural Control of Movement, Santa Fe, N.M. 2018
- Vyas S**, Even-Chen N, Stavisky SD, Ryu SI, Nuyujukian P, Shenoy KV, “Brain-machine interface guided movements share a common neural substrate with overt movements,” Society for Neuroscience, Nanosymposium on Motor Control and Internal Representations, Washington D.C. *Talk. Selected as SfN Hot Topic.* 2017
- Even-Chen N, **Vyas S**, Ryu SI, Shenoy KV, “The effect of task dimensionality on BMI performance,” Society for Neuroscience, Washington D.C. 2017

	Sheffer B, Even-Chen N, Vyas S , Ryu SI, Shenoy KV, “Direction and distance decoding accuracy from plan activity in monkey motor cortex,” Society for Neuroscience, Washington D.C.	2017
	Williams A, Poole B, Maheswaranathan N, Kim TH, Wang F, Vyas S , Shenoy KV, Schnitzer ML, Kolda TG, Ganguli S, “Low-dimensional representations of learning in multi-trial datasets,” Society for Neuroscience, Washington D.C.	2017
	Vyas S , Christensen AJ, Iyer SM, Ramakrishnan C, Deisseroth K, Delp SL, “Optical and computational tools for analyzing somatosensory circuits,” Society for Neuroscience, Chicago, IL.	2015
	Christensen AJ, Iyer SM, Vyas S , Francois A, Scherrer G, Deisseroth K, Delp SL, “Optogenetic tools for perturbing spinal neural circuits,” Society for Neuroscience, Chicago, IL.	2015
	Iyer SM, Christensen AJ, Vyas S , Vesuna S, Francois A, Ramakrishnan C, Deisseroth K, Scherrer G, Delp SL, “Optogenetic interrogation of mammalian mechanosensory and nociceptive circuits,” Society for Neuroscience, Chicago, IL.	2015
	Vyas S , Nguyen HV, Burlina P, Banerjee A, Garza L, Chellappa R, “Computational Modeling of Skin Reflectance Spectra for Biological Parameter Estimation through Machine Learning,” SPIE: Proceedings of SPIE. <i>Talk</i> .	2012
Patents	Burlina P, Banerjee A, Vyas S , Garza L, “Hyperspectral Imaging for Detection of Skin Related Conditions,” U.S. Patent No. 8,761,476. Granted on June 24, 2014.	2014
Talks	Neurosurgery Grand Rounds, Barrow Neurological Institute, Phoenix, AZ, “Neurobiology of flexible deductive reasoning.”	2025
	Sensorimotor Superlab, Western University, “Neurobiology of flexible deductive reasoning.” Virtual.	2024
	Janelia Research Campus, Mechanistic Cognitive Neuroscience Junior Scientist Workshop, “Neural computations underlying complex cognitive motor sequences.”	2022
	Simons-Emory International Consortium on Motor Control, Workshop on Neural Dynamics, “Computation through dynamics.”	2020
	Princeton University, Tim Buschman’s group, “What role does motor preparation play during motor learning.”	2020
	Columbia University, Daniel Salzman’s group, “What role does motor preparation play during motor learning.”	2020
	Columbia University, Mark Churchland’s group, “What role does motor preparation play during motor learning.”	2020
	Stanford University, Department of Neurobiology, “The Shenoy Lab Evening,” Stanford, CA, “Neural population dynamics underlying motor learning.”	2019

Advances in Motor Learning and Motor Control (MLMC), Chicago, IL, “Causal role of motor preparation during error-driven learning.”	2019
Massachusetts Institute of Technology, Mehrdad Jazayeri’s group, Cambridge, MA, “Neural population dynamics underlying visuomotor learning.”	2019
University of Chicago, David Freedman’s group, Chicago, IL, “Neural population dynamics underlying visuomotor learning.”	2019
Carnegie Mellon University, Byron Yu’s & Matt Smith’s groups, Pittsburgh, PA, “Neural population dynamics underlying visuomotor learning.”	2019
University of California, Berkeley, Jose Carmena’s group, Berkeley, CA, “Neural population dynamics underlying visuomotor learning.”	2019
Stanford University, Invited talk at Center for Mind, Brain, Computation, and Technology (MBCT), Stanford, CA, “Neural population dynamics underlying visuomotor learning.”	2019
Johns Hopkins University, Reza Shadmehr’s group, Baltimore, MD, “Neural population dynamics underlying visuomotor learning.”	2018
Advances in Motor Learning and Motor Control (MLMC), Washington DC, “Neural population dynamics underlying covert-to-overt motor learning transfer.”	2017
Society for Neuroscience, Nanosymposium on Motor Control and Internal Representations, Washington DC, “Brain-machine interface guided movements share a common neural substrate with overt movements.”	2017
Stanford University, Bioengineering Retreat, Chaminade Resort & Spa, Santa Cruz, CA, “Neural population dynamics underlying motor learning transfer.” Best Talk Award.	2017
Stanford University, Invited talk to Neurosciences Ph.D. program candidates, hosted by Jay McClelland. “Neural Dynamics and Adaptation for Brain-Machine Interface Control.”	2017
Stanford University, Bioengineering Retreat, Chaminade Resort & Spa, Santa Cruz, CA, “Towards a freely moving macaque model for motor neuroscience and brain-machine interfaces.”	2016
Google, Invited talk by Thomas Dean, Mountain View, CA, “Estimating Neuronal Connectivity from Calcium Imaging Data.”	2015
IEEE CBMS conference in New York, NY, “Computing Cardiac Strain from Variational Optical Flow in Four-Dimensional Echocardiography.”	2014
MICCAI workshop in Nagoya, Japan. “Automated Walks using Machine Learning for Segmentation.”	2013
ISBI conference in San Francisco, CA, “Endocardium Segmentation in 3D Transesophageal Echocardiography.”	2013
SPIE Medical Imaging conference in Orlando, FL, “Hyperspectral Signature Analysis of Skin Parameters.”	2013

	SPIE conference in Baltimore, MD, “Computational Modeling of Skin Reflectance Spectra for Biological Parameter Estimation through Machine Learning.”	2012
	SPIE Medical Imaging conference in San Diego, CA, “Intraoperative Ultrasound to Stereocamera Registration using Interventional Photoacoustic Imaging.”	2012
Outreach & Service	Satellite Meeting organization, 34th Neural Control of Movement conference <i>Co-organizer (with Dan O’Shea & Sam McDougale) for the Satellite Meeting on “New Frontiers at the Intersection of Cognition and Motor Control.”</i>	2025
	ZIGI, Columbia University <i>Board member; Supporting and advocating for people who have been historically marginalized in STEM fields.</i>	2024 – 2025
	ZIPSx, Columbia University <i>Co-organized extramural postdoctoral seminar series, focusing on scientists historically marginalized in science.</i>	2023 – 2025
	Zuckerman Institute Athletics Club, Columbia University <i>Co-founding board member; co-organized running and triathlon activities.</i>	2021 – 2025
	Computational Neuroscience Journal Club, Stanford University <i>Co-founder and co-organizer.</i>	2015 – 2018
	Stanford Biosciences Student Association, Stanford University <i>Mentored first-year biosciences (bioengineering) graduate students.</i>	2016 – 2019
	Center for Mind, Brain, & Computation, Stanford University <i>Organized the Monday evening seminar series; invited and hosted speakers.</i>	2015 – 2019
	Stanford Undergraduate Research Association, Stanford University <i>Mentored undergraduate students interested in research opportunities.</i>	2018
	Biomedical Engineering Society, Stanford University <i>Mentored undergraduate students interested in bioengineering careers.</i>	2018
	Boys and Girls Club, Palo Alto, CA <i>SAT tutoring for high school students in the east Palo Alto area.</i>	2015 – 2016
	ASPIRE Program, Johns Hopkins Applied Physics Laboratory <i>Mentored high school students in robotics, and computer vision.</i>	2013 – 2014
	College Prep Program, Johns Hopkins University <i>Developed an SAT curriculum; lectured a classroom of 20 students.</i>	2013 – 2014
	Tutorial Project, Johns Hopkins University <i>Tutored math and reading to Baltimore City Elementary school students.</i>	2018
	<i>Ad hoc</i> reviewer for: Nature Neuroscience, Nature Communications, Nature Human Behavior, Communications Biology, Cell Reports, Journal of Neural Engineering, Neural Networks, COSYNE	

Teaching	EE 124: Introduction to NeuroElectrical Engineering, Stanford University <i>Co-instructor (with Krishna Shenoy)</i>	2018
	NBio 227: Techniques in Neuroscience, Stanford University <i>Guest lecturer on Brain Machine Interfaces</i>	2017, 2018
	BIOS 230: Biomedical Data Analysis in Matlab, Stanford University <i>Co-developed and co-instructed 3-week mini course (with Nimit Jain)</i>	2015
Course Assistant	EE 364a: Convex Optimization, Stanford University	2017, 2018, 2019
	EE 278: Statistical Signal Processing, Stanford University	2018
	EE 376a: Information Theory, Stanford University	2017
	BioE 281: Biomechanics of Movement, Stanford University	2016
	CS 229: Machine Learning, Stanford University	2015
	580.421: Systems Bioengineering Laboratory, Johns Hopkins University	2012