SHRADDHA SHAH

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EDUCATION

University of Rochester Medical Center *2016-2022*
PhD, Neuroscience

University of Rochester Medical Center *2018*
Master of Science, Neuroscience

Thayer School of Engineering, Dartmouth College *2013*
Master of Engineering Management

Sardar Patel Institute of Technology, University of Mumbai *2011*
Bachelor of Engineering, Electronics Engineering (top 10% in class)

Training courses

Neuromatch Academy: Computational Neuroscience *July 2023*

Vision: A Platform for Linking Circuits, Behavior and Perception, *June 2019*
Cold Spring Harbor Laboratory

RESEARCH

Postdoctoral Associate *Nov 2022 - present*
Baylor College of Medicine, Houston TX, USA

Adviser: Sameer Sheth, MD PhD

Investigating the neuronal mechanisms underlying abstract and generalizable task representations in the prefrontal and medial temporal cortex using intracranial recordings in epilepsy patients undergoing neurosurgical procedures

Conducting high-density single-unit recordings in patients undergoing brain resection neurosurgery in order to study local microcircuits in the human brain

Dissertation Research *2019 - 2022*
Adviser: Farran Briggs, PhD

Dissertation: Linking attentional modulation to neuronal feature-selectivity in macaque V1

HONORS AND AWARDS

Selected participant and Travel award, Science Forward conference *2023*
(Towards inclusive excellence in academia) at Cold Spring Harbor Laboratory
eLife Community Ambassador *2022 - 2023*
Society for Neuroscience Trainee Professional Development Award *2021*
UR Graduate Women in Science Mentoring-Up Resolution Challenge winner *2021*
Messersmith & Goodman Fellowship, Neuroscience Graduate Program nominee *2021 - 2022*
Messersmith & Goodman Fellowship, Neuroscience Graduate Program nominee *2020 - 2021*
Helmsley Scholar, summer course in Vision at Cold Spring Harbor Laboratory *2018 - 2019*
Fields Institute Travel Award to attend VISTA Mathematics of Vision workshop *2019*
Schmitt Program in Integrative Neuroscience Travel Award to present at *2018*
Society for Neuroscience annual international conference
Awarded $10k grant for a self-proposed global health research project, *2012*
Dean's Funds, Thayer School of Engineering, Dartmouth College

Abraham Fellowship, Thayer School of Engineering, Dartmouth College *2011 - 2012*
Global Engagement Summit Delegate, Northwestern University *2012*
JRD Tata Trust Scholarship, University of Mumbai *2009 - 2010*
Sir Dorabji Tata Trust Education Grant, University of Mumbai *2008 - 2009*

TALKS AND INVITED PANELS

Selected Oral Presentation, "Revealing the functional and physiological properties of human single neurons in a temporal cortical microcircuit using Neuropixels", World Society for Stereotactic and Functional Neurosurgery (September 2024)

Selected Symposium talk (selected among 10% of the submitted symposiums) as part of the symposium "High-density and high-resolution neurophysiology to reveal local microcircuits in the human brain" at the 10th Annual BRAIN Initiative Conference (June 2024)

Selected Oral Presentation, "Revealing the functional and physiological properties of human single neurons in a temporal cortical microcircuit using Neuropixels", American Society for Stereotactic and Functional Neurosurgery (June 2024)

Invited participant, "Ethical and Regulatory Considerations of Novel Neurotechnology in the Operating Room", satellite meeting at American Society for Stereotactic and Functional Neurosurgery (June 2024)

ROH Young Investigators Meeting 2023, "Neuropixels in the OR: High-density electrode recordings to peer into the human brain" (July 2023)

Invited talk, Plexon Neuroscience 2023 Data Blitz, "Investigating the relationship between attentional modulation and task-relevant feature selectivity among V1 neurons" (January 2023)

Invited speaker, BioMed Career Convention, South Brunswick High School (April 2022)

Invited talk, Plexon Neuroscience 2021 Data Blitz, "Attentional modulation of spike count correlations among pairs of anatomically connected V1 neurons" (November 2021)

Invited talk, Growing-up-in-science style talk, NEUROCITY Dinner seminar, University of Rochester Medical center (July 2021)

Accepted Talk, "Attention differentially modulates multiunit activity in the LGN and V1 of macaque monkeys", Neuromatch 3.0 conference (October 2020)

Dept. Lunch Talk, "Attentional modulation of multiunit activity in LGN and V1", Department of Brain and Cognitive Sciences, University of Rochester (January 2020)

Invited talk, "A conceptual overview of systems neuroscience research: functional organization and neural mechanisms", Eternal University, India (April 2019)

Invited talk, "A very short introduction to Systems Neuroscience", Science and Technology Entry Program (STEP) - UP TO MEDICINE program (program for high-school students), University of Rochester School of Medicine and Dentistry (December 2017)

Invited Poster Teaser Talk, "Inactivation of primate dorsolateral prefrontal cortex during auditory working memory", Annual Neuroscience Retreat, University of Rochester Medical Center (May 2017)

PUBLICATIONS

K.A. Katlowitz, **S. Shah**, M. C. Franch, J. Adkinson, J. L. Belanger, R. K. Mathura, D. Meszna, E. A. Mickiewicz, M. McGinley, W. Muoz, G. P. Banks, S. S. Cash, C. Hsu, A. C. Paulk, N. R. Provenza, A. Watrous, Z. Williams, S. R. Heilbronner, R. Kim, N. Rungratsameetaweemana, B. Y. Hayden, S. A. Sheth, Learning and language in the unconscious human hippocampus, bioRxiv (2025), (under review)

S. Shah, J. R. Hembrook-Short, V. Mock, F. Briggs, Correlated variability, and its attentional modulation, depend on anatomical connectivity, Proceedings of National Academy of Sciences (August 2024)

S. Shah, M. Mancarella, J. R. Hembrook-Short, V. Mock, F. Briggs, Attention differentially modulates multiunit activity in the LGN and V1 of macaque monkeys, The Journal of Comparative Neurology (2022)

S. Shah, J. R. Hembrook-Short, V. Mock, F. Briggs Investigating the relationship between attentional modulation and task-relevant feature selectivity among V1 neurons in a multiple attention task (under prep)

H. Azab, M. El-Gaby, **S. Shah**, R. Mathura, E. Bartoli, A. Watrous, A. Anand, J. A. Adkinson, T. Donoghue, S. M. Perreira, U. Topalovic, J. Sakon, Z. Kurth-Nelson, E. H. Smith, N. Suthana, I. Fried, J. Jacobs, M. Botvinick, T. E. J. Behrens, S. A. Sheth, Single neuron representations of sequential task structure in the human brain (under prep)

L. Mattar, **S. Shah**, Y. Zhang, J. A. Adkinson, I. Danstrom, Y. Reed, L. S. Chamakura, D. Oswalt, K. R. Bijanki, A. Watrous, S. R. Heilbronner, S. A. Sheth, G. P. Banks, E. Bartoli, Neural signatures and neuromodulation in a subject experiencing inhibition control deficits following temporal resection (under prep)

CONFERENCE POSTERS

* presenting author

H. Azab*, M. El-Gaby, **S. Shah**, R. Mathura, E. Bartoli, A. Watrous, A. Anand, J. A. Adkinson, T. Donoghue, S. M. Perreira, U. Topalovic, J. Sakon, Z. Kurth-Nelson, E. H. Smith, N. Suthana, I. Fried, J. Jacobs, M. Botvinick, T. E. J. Behrens, S. A. Sheth (2023) Single neuron representations of sequential task structure emerge rapidly in human anterior cingulate and entorhinal cortex, poster presentation, Society for Neuroscience

H. Azab*, M. El-Gaby, **S. Shah**, R. Mathura, E. Bartoli, A. Watrous, A. Anand, J. A. Adkinson, T. Donoghue, S. M. Perreira, U. Topalovic, J. Sakon, Z. Kurth-Nelson, E. H. Smith, N. Suthana, I. Fried, J. Jacobs, M. Botvinick, T. E. J. Behrens, S. A. Sheth (2023) Single neuron representations of sequential task structure emerge rapidly in human entorhinal and anterior cingulate cortex, poster presentation, 9th Annual BRAIN Initiative Meeting

S. Shah*, M. Mancarella, J. R. Hembrook-Short, V. Mock, F. Briggs (2023) Investigating the relationship between attentional modulation and task-relevant feature selectivity among V1 neurons, poster presentation, International Conference on Learning and Memory

S. Shah*, M. Mancarella, J. R. Hembrook-Short, V. Mock, F. Briggs (2022) Investigating the relationship between attentional modulation and task-relevant feature selectivity among V1 neurons, poster presentation, Society for Neuroscience

S. Shah*, M. Mancarella, J. R. Hembrook-Short, V. Mock, F. Briggs (2022) Investigating the relationship between attentional modulation and task-relevant feature selectivity among V1 neurons, poster presentation, Human Single Neuron meeting

S. Shah*, J. R. Hembrook-Short, V. Mock, F. Briggs (2022) Attentional modulation of spike count correlations among pairs of anatomically connected V1 neurons, poster presentation, Gordon Research Conference, Neurobiology of Cognition

S. Shah*, J. R. Hembrook-Short, V. Mock, F. Briggs (2022) Attentional modulation of spike count correlations among pairs of anatomically connected V1 neurons, poster presentation, Gordon Research Seminar, Neurobiology of Cognition

S. Shah*, J. R. Hembrook-Short, V. Mock, F. Briggs (2022) Attentional modulation of spike count correlations among pairs of anatomically connected V1 neurons, poster presentation, Center for Visual Science Symposium 2022, University of Rochester

S. Shah*, B. Carr, J. R. Hembrook-Short, V. Mock, F. Briggs (2021) Attentional modulation of spike count correlations among pairs of anatomically connected V1 neurons, poster presentation, Society for Neuroscience

S. Shah*, M. Mancarella, J. R. Hembrook-Short, V. Mock, F. Briggs (2020) Attentional modulation of multiunit activity leads to facilitation of firing rates in V1, but not in LGN, poster presentation, Center for Visual Science Annual Retreat, University of Rochester

S. Shah*, T. Lincoln, K. Kevelson, L. M. Romanski (2018) Memory and integration of faces and vocalizations in neuronal populations in the primate prefrontal cortex, poster presentation, Society for Neuroscience

S. Shah*, T. Lincoln, K. Kevelson, L. M. Romanski (2018) Memory and integration of faces and vocalizations in neuronal populations in the primate prefrontal cortex, poster presentation, Advances and Perspectives in Auditory Neuroscience

S. Shah*, B. Plakke, T. Lincoln, K. Kevelson, J. Bigelow, L. M. Romanski (2017) Inactivation of primate dorsolateral prefrontal cortex during auditory and visual working memory, poster presentation, Society for Neuroscience

S. Shah*, B. Plakke, T. Lincoln, K. Kevelson, J. Bigelow, L. M. Romanski (2017) Inactivation of primate dorsolateral prefrontal cortex during auditory and visual working memory, poster presentation, Advances and Perspectives in Auditory Neuroscience

TEACHING AND MENTORING

- Project co-mentor: Layth Mattar, research assistant, Sheth Lab and Bartoli Lab, Baylor College of Medicine (Sept. 2023 - present)
- Bench mentor: Somya Mittal, Pranav Mehta, undergraduate researchers, Sheth Lab, Baylor College of Medicine (Rice University, Independent Research, Spring 2023)
- Organized and participated in a special topics' reading course, "Neural population coding approaches in Systems Neuroscience", University of Rochester (Spring 2020-21)
- Bench mentor: Tanique McDonald, Briggs Lab, University of Rochester (2020-21)
- Student mentor of UR undergraduate students Brenda Hernandez-Romero, Leen Khankan, UR2 Mentorship program, University of Rochester (Spring 2021, Fall 2021)
- Graduate Teaching Assistant: NSC 241/541 Neurons, Circuits, and Systems, University of Rochester (Fall 2019, Fall 2020)
- Graduate Teaching Assistant: NSC 547 Introduction to Computational Neuroscience, University of Rochester Medical Center (Summer 2020)
- Graduate Teaching Assistant: BCS 110 Neural Foundations of Behavior, University of Rochester (Spring 2016)
- Graduate Teaching Assistant: ENGS 1/9 Everyday Technology, Dartmouth College (2011)
- Graduate Teaching Assistant: MATLAB Lab, Dartmouth College (2011-12)

PEER REVIEW

Journal of Neural Engineering
Progress in Neurobiology

SERVICE & LEADERSHIP

- NINDS Research on Humans Young Investigators' Core team member (2024-25)
- Organizing committee member, Seminars for Postdocs Advancing Inclusion seminar series, Baylor College of Medicine (2023-24)
- Participant in Skype-a-Scientist (2018 - present)
- Lead Judge, Behavioral and Social Sciences category, 2023 Science and Engineering Fair of Houston (February 2023)
- Selected participant, ComSciCon Houston (February 2023)
- Invited panelist, Empowered Menteeship, Neuroeast highschool research program, East High School, Rochester, NY (April 2022)
- Invited panelist, Mentorship experiences in graduate school, Neuroscience Graduate Program Bootcamp for incoming students (August 2021)
- Invited to lead discussion on 'Disability and Mental health in academia' in the Thalamus Trainees meeting series (June 2021)
- Invited student member, Del Monte Institute for Neuroscience Diversity Commission, leading projects on Cultural Transformation (2020 - 2022)
- Co-founder and member, Neuroscience Graduate Program Student Solidarity Organization, University of Rochester Medical Center (2020 - 2022)
- Invited student member, International Student Advisory Board (2020 - 2022)
- Advisory committee member for a first year graduate student in the Neuroscience Graduate Program (2017 - 2018, 2018 - 2019, 2020 - 2021, 2021 - 22)
- Invited member, Society for Neuroscience's Neuronline Community Leaders program (2018 - 2020)
- Brain Awareness week activities, University of Rochester Medical Center (2016, 2018)

WORK EXPERIENCE

Research Analyst, Lancaster General Health Innovative Solutions *2013 - 2014*
Part of Lancaster General Health (LGH), Lancaster PA

- Qualitative and ethnographic research, and technology assessment for: redesign of care delivery models for high utilizer population in Lancaster, chronic disease management mobile application for cardiac patients, genomics at LGH

Summer Intern, VillageTech Solutions *2012*
Non-profit organization developing and providing technology solutions for rural Nepal

- Project management for the development and launch of the 's product Looma (an intelligent audio-visual projector system for classrooms in Nepal)

Student Member, Design For America, Dartmouth College *2011 - 2012*
Nationwide network of interdisciplinary student teams using design to address social challenges in health, economy, education and environment

- Human-centered design methods to identify and address stressors faced by middle school students in a local school in Vermont b
- Development of an initiative to promote design education among students in India. Pilot implementation at my alma mater Sardar Patel Institute of Technology, Mumbai from Aug - Sept 2012