Jesseba **Fernando**

PhD Student · Network Science Institute

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Education

Northeastern University — *Boston, MA*
PhD Network Science — *08/2023 - present*
- Advisor: Dr. Samuel V. Scarpino

University of Connecticut — *Storrs, CT*
MS Neurobiology — *08/2016 - 05/2018*
- Advisor: Dr. Joseph LoTurco

University of Connecticut — *Storrs, CT*
BS Physiology and Neurobiology — *08/2012 - 05/2016*
- Minors in Molecular and Cellular Biology and English
- Honors thesis/undergrad research advisor: Dr. Joseph LoTurco

Professional Experience

2023	**Research Assistant**, Dana Farber Cancer Institute - Data Science Department
2022-2023	**Consultant**, E11 Bio
2018-2023	**Senior Research Associate**, Harvard Medical School
2016-2018	**Graduate Teaching Assistant**, Physiology and Neurobiology, University of Connecticut
2013-2016	**Undergraduate Research Assistant**, Physiology and Neurobiology, University of Connecticut

Publications

** equally contributing authors*

Published

Fernando, Jesseba*, Katharina V. Hoebel*, William Lotter. 2024. Beyond Structured Attributes: Image-Based Predictive Trends for Chest X-Ray Classification. Machine Learning for Biomedical Imaging

Nguyen, Nghia D., Andrew Lutas, Oren Amsalem, **Jesseba Fernando**, Andy Young-Ahn, Richard Hakim, Josselyn Vergara, Justin McMahon, Jordane Dimidschstein, Bernardo L Sabatini, Mark L Andermann. 2024. Cortical reactivations predict future sensory responses. Nature, 625 (7993), 110-118.

Reggiani, Jasmine DS, Qiufen Jiang, Melanie Barbini, Andrew Lutas, Liang Liang, **Jesseba Fernando**, Fei Deng, Jinxia Wan, Yulong Li, Chinfei Chen, Mark L Andermann. 2023. Brainstem serotonin neurons selectively gate retinal information flow to thalamus. Neuron, 111 (5), 711-726. e11.

McGuire, Kelly L., Oren Amsalem, Arthur U Sugden, Rohan N Ramesh, **Jesseba Fernando**, Christian R Burgess, Mark L Andermann. 2022. Visual association cortex links cues with conjunctions of reward and locomotor contexts. Current Biology, 32 (7), 1563-1576. e8.

Presentations

*† presenting author; * equally contributing authors*

Contributed Presentations

Fernando, Jesseba*†, Katharina V. Hoebel*, William Lotter. 2024. Beyond Structured Attributes: Image-Based Predictive Trends for Chest X-Ray Classification. Poster: Medical Imaging with Deep Learning, Paris, France.

Fernando, Jesseba†, Marilyn Gatica, Giovanni Petri, Samuel V. Scarpino. 2025. Functional brain network reorganization during task learning. Contributed talk: NetSci-X, Indore, India.

Teaching Experience

Spring 2018 **PNB 2275: Physiology and Neurobiology II**, Teaching Assistant
Fall 2017 **PNB 2274: Physiology and Neurobiology I**, Teaching Assistant
Summer 2017 **Integrative Neurobiological Imaging**, Teaching Assistant
Spring 2017 **PNB 2275: Physiology and Neurobiology II**, Teaching Assistant
Fall 2016 **PNB 2274: Physiology and Neurobiology I**, Teaching Assistant

Research Experience

Northeastern University - Network Science Institute *Boston, MA*
Advisor: Dr. Samuel V. Scarpino *Aug. 2023 - Present*

Dana Farber Cancer Institute *Boston, MA*
Supervisor: Dr. William Lotter *2023*
- Paper: "Beyond Structured Attributes: Image-Based Predictive Trends for Chest X-Ray Classification"

Harvard Medical School/Beth Israel Deaconness Medical Center *Boston, MA*
Supervisor: Dr. Mark Andermann *2018 - 2022*
- Projects: Imaging cortical neurons over weeks across initial learning and reversal to better understand encoding strategies of cues and outcomes in postrhinal cortex; Exploring the role of serotonin on retinal information flow to thalamus; Study role of offline cortical reactivations in memory consolidation for both stimulus response and prediction.

University of Connecticut - Dept of Physiology and Neurobiology *Storrs, CT*
Advisor: Dr. Joseph LoTurco *2013-2016*
- Honor's Thesis: "Time Course Synapse Development in Interneurons of the Disinhibitory Circuits of Somatosensory Cortex"

Outreach & Professional Development

Service and Outreach

2024-2025 **Network Science Institute's Graduate Student Association**, Events Coordinator
2024 **Cross Lab Theoretical Neuroscience Reading Group**, Organizer

Development

UCLA Institute of Pure and Applied Mathematics Workshop: Mathematical Approaches for Connectome Analysis, This interdisciplinary workshop brought together neuroscientists and mathematicians to address the challenges of analyzing large-scale neural connectivity data ("connectomes"). I developed a cross-disciplinary perspective on connectomics research and connected with experts in neuroscience, mathematics, and data science.

Neuromatch Computational Neuroscience, I participated in an intensive, code-first computational neuroscience course focusing on machine learning and causality research applied to neuroscience. Our group presented our work on "Adaptive Decision-Making in Mice: Behavioral Strategies under Symmetric and Asymmetric Visual Stimuli Probabilities".

MIT CBMM Summer School: Brains, Minds, Machines Summer School, Participated in an intensive, interdisciplinary summer program focused on the problem of intelligence from neuroscience, cognitive science, and artificial intelligence perspectives. I presented my work on "Adaptive Reinforcement Learning Models for Mouse Decision-Making in Visual Discrimination Tasks" at the culmination of the school.