



BME COVID-19 SEMINAR SERIES

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Date: Monday, April 26th, 2021

Time: 1:30 p.m.

Location: Virtual – Zoom

Faculty Host: Sridevi Sarma, PhD

Comparing neural recordings across time, space, and behavior

Abstract: With advances in experimental methods in neuroscience, neural datasets are becoming increasingly high dimensional, both with measurements spanning larger brain volumes and longer periods of time. However, with more data, more neurons, and more time points over which we can sample, comes many more problems. In this talk, I will highlight strategies for distilling complex and high-dimensional neural datasets into more interpretable and simplified low-dimensional formats. Once data are embedded in a low-dimensional space, I will show how their shape and geometry can then be leveraged to align the low-dimensional structures present, even across different datasets that may live in different domains (e.g., neural activity and movement). Alignment thus provides a way to bring many neural datasets together to both understand common computational primitives across brains and learn signatures of disease.

Bio: Eva Dyer is an Assistant Professor in the Coulter Department of Biomedical Engineering at the Georgia Institute of Technology and Emory University. Dr. Dyer works at the intersection of neuroscience and machine learning, developing computational approaches to interpret complex neuroscience datasets, and designing new machine intelligence architectures inspired by the organization of biological brains. Dr. Dyer completed all of her degrees in Electrical & Computer Engineering, obtaining a Ph.D. and M.S. from Rice University, and a B.S. from the University of Miami. She is the recipient of an NSF CISE Research Initiation Initiative Award, a Sloan Fellowship in Neuroscience, was an Allen Institute for Brain Science Next Generation Leader, and was recently awarded a McKnight Award for Technological Innovations in Neuroscience.