

Berkeley Algebraic Statistics Seminar

Organizer(s): and Andrew Critch and Shaowei Lin

Wednesday, 3:30–5:00pm, 740 Evans

Aug 17 **Shaowei Lin**, UC Berkeley

Sparse Coding and Why it Works

Neural networks are quickly regaining popularity in the field of artificial intelligence. Recent studies in data-driven applications such as image and speech recognition show that such networks are more effective at discovering salient features than many other conventional methods. The achieved results are surprisingly similar to those coming from neuroscience experiments. Moreover, unlike conventional methods, these networks can be trained without much human supervision. One reason for their new-found success is the incorporation of sparse coding into the learning algorithms. We still do not fully understand why it works, nor how the brain accomplishes this. In this talk, I will give an introduction to neural networks and sparse coding, and lay out mathematical questions about why sparse coding works.

The lecture is followed by an organizational session where we discuss the plans for this seminar in the fall semester.