University of California, Irvine
Statistics Seminar

Statistical Thinking in Deep Learning

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6011 Donald Bren Hall

The past few years have seen significant advances in the application of deep learning methods in areas such as interactive chatbots, speech recognition, image analysis, and more. The deep learning techniques underlying these successes are often algorithmic in nature and can seem far removed from concepts in statistics. However, beyond the surface-level differences there is significant common ground at the interface of statistics and deep learning - this talk will explore this interface from a statistics perspective. We will discuss some of the key concepts in deep learning and how these concepts are related to well-known ideas in statistical modeling and estimation. We will also highlight key differences, both technically and culturally, in terms of how data analysis problems are approached by researchers in both fields. Current research topics that are at the intersection of statistics and deep learning will be used to provide illustrative examples throughout the talk. The talk will be tutorial in nature and accessible to a statistical audience with no prior knowledge about deep learning.