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Title: On a geometric problem of machine learning

Abstract: In the context of Singular Learning Theory, there is a notion called “learning coefficient” that measures how efficiently some machine learning models can be trained. This number is notoriously difficult to calculate or estimate in general. In this lecture we show how equivariant geometry helps to determine the learning coefficient of a simple model (called deep linear neural networks). Along the way we will discuss the main reasons for matrices multiplying to 0. Joint work with S. P. Lehalleur and J. Koncki.