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Understanding Machine Learning via Exactly Solvable Statistical Physics Models

Wednesday 1 December 2021 16:30 (30 minutes)

The affinity between statistical physics and machine learning has a long history, I will describe the main lines of this long-lasting friendship in the context of current theoretical challenges and open questions about deep learning. Theoretical physics often proceeds in terms of solvable synthetic models, I will describe the related line of work on solvable models of simple feed-forward neural networks. I will highlight a path forward to capture the subtle interplay between the structure of the data, the architecture of the network, and the learning algorithm.

Presenter: ZDEBOROVA, Lenka

Session Classification: Plenary