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Effective Theory of Deep Neural Networks

Thursday 30 May 2024 09:30 (45 minutes)

Large neural networks perform extremely well in practice, providing the backbone of modern machine learning. In this talk, we'll first overview how the statistics and dynamics of deep neural networks drastically simplify at large width and become analytically tractable. We'll then see how the concepts of the renormalization-group flow and critical phenomena naturally emerge in computing and controlling various observables that govern the behavior of deep neural networks.

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