The power of depth for deep nets in learning theory

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Abstract: The objective of this talk is to show the power of depth for deep nets in learning theory. In particular, we find that the depth plays an important role for neural networks in providing localized approximation, manifold learning, realizing rotation invariance priors and embodying sparsity in the frequency domain and in the spatial domain . We establish almost optimal learning rates for learning the related functions in a standard learning theory framework.