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Abstract

This workshop will provide intensive interactions between researchers specialized in approximation theory and in learning theory. Learning theory aims at modeling unknown function relations and data structures from samples in an automatic manner. Approximation theory is naturally used for the advancement and closely connected to the further development of learning theory, in particular for the exploration of new useful algorithms, and for the theoretical understanding of existing methods. Conversely, the study of learning theory also gives rise to interesting theoretical problems for approximation theory such as the approximation and sparse representation of functions on low dimensional manifolds in a huge dimensional Euclidean space or the construction of rich kernel reproducing Hilbert spaces on general metric spaces. Combining methods from learning theory and approximation theory will hopefully turn out to be successful in the so-called big data situation.