

Compression of images with learning multiresolution schemes

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Resumen

Learning theory plays a key role in the several scientific fields such as statistics, data mining, artificial intelligence, as well as in some engineering areas. Multiscale decompositions are a well established tool that aims at a rearrangement of the information contents in a set of discrete data. Multiresolution transform are based on transfer operators connecting consecutive resolution levels. In this work we apply learning techniques in order to construct one of the key operators of multiscale decompositions within Harten's multiresolution framework: the prediction operator. When applied to the compression of images, 'Learning' can be used to obtain nearly-optimal filters for the prediction process for images on a given library or class. We perform several numerical experiments with these newly designed "learning-multiresolution" transforms and compare our results with the results obtained with other more classical methods.

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Referencias

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