

Sampling Sparse Codes

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Most Recent Edit: 02/10/2016

Abstract Weights learned from natural scenes via the l_0 sparse coding energy function have been shown to match well to classical and non-classical biological receptive field properties of pyramidal cells in primary visual cortex. However, the l_0 energy function is non-convex and thus without a known global minima. Therefore, any given energy level could be represented by several equal local minima. We test the hypothesis that these local minima have varying support for whole-scene object classification. We test the hypothesis by sampling from the space defined by a basis set learned with an l_0 sparse coding energy function. We show that sampling multiple local minima in the energy landscape enables improved classification performance.

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