Poster ID
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Efficient Match Kernels (EMK) between Sets of Features for Visual Recognition

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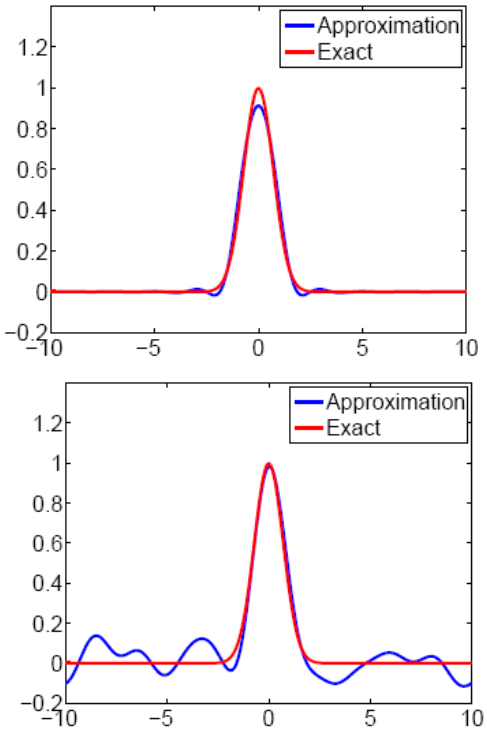
Bag-of-Words+Linear Kernel = Special Match Kernel
however, ***the quantization is too coarse***

Accurate Quantization: Gaussian kernel can be used as a local kernel, but this is ***computationally prohibitive***

Our Solutions: Approximate the Gaussian kernel with low dimensional features ***(linear complexity)***

(1) Constrained Kernel Singular Value Decomposition

(2) Random Fourier Set Features



Caltech-101: highly competitive results compared with ten recent algorithms.

Algorithms	15 training	30 training	Algorithms	15 training	30 training
PMK [5, 6]	50.0±0.9	58.2	kCNN [29]	59.2	67.4
HMAX [18]	51.0	56.0	LDF [4]	60.3	N/A
ML+PMK [9]	52.2	62.1	ML+CORR [9]	61.0	69.6
KC [27]	N/A	64.0	NBNN [1]	65.0±1.1	73.0
SPM [13]	56.4	64.4±0.5	EMK-Fourier	60.2±0.8	70.1±0.8
SVM-KNN [30]	59.1±0.5	66.2±0.8	EMK-CKSVD	60.5±0.9	70.3±0.8