

Learning Kernels Using Local Rademacher Complexity

(Sat02)

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Kernel-based learning algorithms:

- typically choice of kernel left to user

„Learning kernels“ / „multiple kernel learning“:

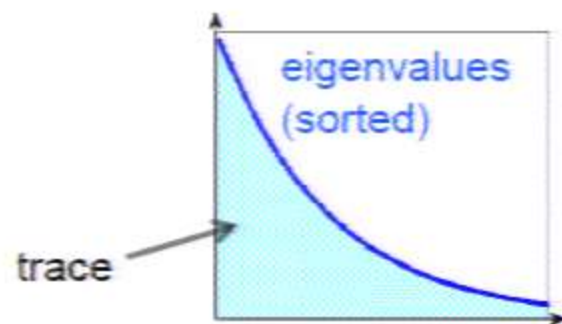
- integrate choice of kernel into learning algorithm

Benefits

- kernel can be selected out of a whole family of kernels (rather than just out of a few candidate kernels)
- theoretical guarantees (generalization bounds)

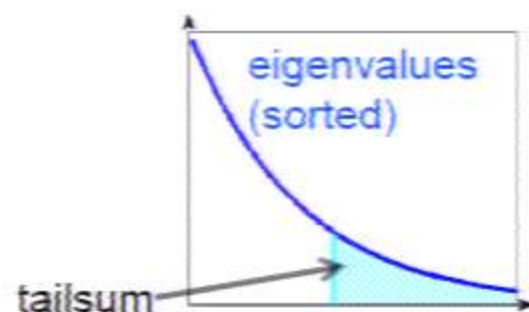
Previous learning-kernels algorithms:

- based on controlling trace of kernel (i.e., sum of all eigenvalues)



In this work:

- explore finer notion of *local Rademacher complexity* to guide designing learning-kernels algorithms
 - can be bounded in terms of tailsum of eigenvalues of kernel
- present theoretical guarantees, algorithms, and experimental results



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