

Workshop on Integral Transforms, Positivity and Applications
September 1-3, 2010, Copenhagen

Modeling similarity: positive definite kernels in applications

Wolfgang zu Castell

castell@helmholtz-muenchen.de

Helmholtz Zentrum München, German Research Center for Environmental Health, Germany

Kernel based methods have turned out to be very successful in many fields of data analysis and pattern recognition. The intuitive idea behind these methods is the embedding of the data into a Hilbert space. Linear approaches can be chosen within this Hilbert space, while the embedding itself provides a way to deal with non-linearity inherent in the data.

The talk will be centered around these ideas, trying to show how the role of the kernel involved is motivated from different points of views. Properties of the kernel will then reflect in the tools at hand to analyse the method and derive qualitative statements concerning its performance.