Course: DD2427 - Exercise Set 2

Due date: 06/05/2016
Cut-off date: 07/06/2016

Exercise 1: *Non-linear SVM*

Consider training data of 1-dimensional points from two categories:

$$class_1 : -5, 5$$
$$class_2 : -2, 1$$

a) Plot these points. Are they linearly separable ?

b) Consider the transformation $\psi : \mathbb{R}^1 \rightarrow \mathbb{R}^2$ defined by $\psi(x) = (x, x^2)$. Transform the data using $\psi()$ and plot these transformed points. Are these transformed points linearly separable ?

c) What is the optimal separating hyper-plane in the transformed space? This separating hyper-plane results in a non-linear discriminant function in the original space. Plot this non-linear discriminant function.

Upload to course web:

Your solution.