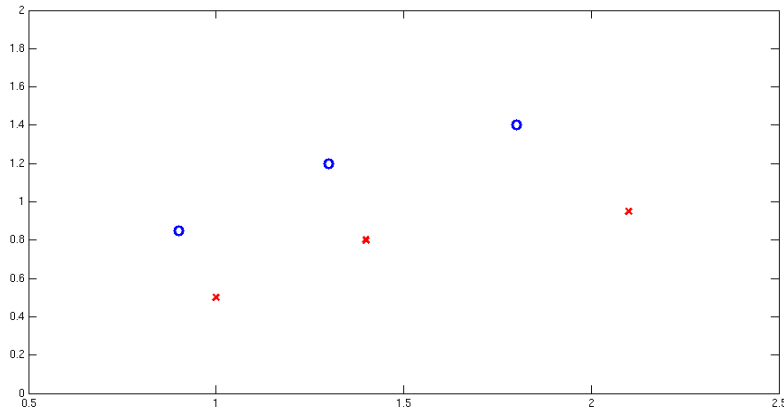# Statistical Methods and Learning in Computer Vision
Winter term 2012

Homework Assignment 5 — December 10th, 2012

Exercise 1. (PCA and Fisher's Discriminant)

Given are two sets of samples from two classes C_1 and C_2

$$P_1 = \{(1, 0.5), (1.4, 0.8), (2.1, 0.95)\} \text{ and } P_2 = \{(0.9, 0.85), (1.3, 1.2), (1.8, 1.4)\}$$

Perform a PCA on the pointset $P_1 \cup P_2$ by computing the direction of the first component. Then compute the direction of the discriminating hyperplane between the two classes C_1 and C_2 by applying Fisher's discriminant. What do you observe?

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