Week 7 Practical

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CAB420: Machine Learning

This weeks practical will focus on Siamese networks and how these can be used to compare things.

Problem 1. Deep Face Recognition. Using the *YaleB_32x32.mat* data, train a Siamese network to match faces of the same subject. In doing this you should:

1. Determine your network architecture, i.e. pairs or triplets, and loss formulation. You may also wish to fine tune an existing network.

2. Implement (or modify) an appropriate method to generate pairs/triplets of images, and verify that this is generating pairs/triplets as expected.

Using your trained network, evaluate it and compare the performance to the PCA and LDA approaches from last week. Note that you can train a CKNN classifier to replicate the functionality of last week's approaches by:

1. Passing each image through the network to generate an embedding;

2. Applying CKNN to the embeddings.

As per last week, evaluate the performance on the *Yale* and *ORL* datasets.