ECSE 415 Project Report

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Part 1

Figs. 1, 2 and 3 are examples of all the possible poses for a given subject. These include yaw rotations from -45°,-30°,0°,30°and 45°at 3 different scales: close, medium and far. The images were taken on a white background.

Figs. 4, 5 and 6 show the different testing poses for a given subject. These include all of the rotations of the training images with the subject facing upwards followed by facing downwards. In addition, different images were taken of each subject without their glasses, with different facial expressions and with a hat on.

Part 2

Fig. 7 shows 10 selected faces with their SIFT features. Note some faces are blurry as the images are low resolution to allow for acceptable computation time although some subjects are far away.

Fig. 8 shows three examples of region histograms for a given training image. We can see that the tendency is for the lower values to have greater frequency.

Fig. 9 shows four histograms. They represent two images; each image has its histogram representing the codewords computed for both LBP and SIFT.
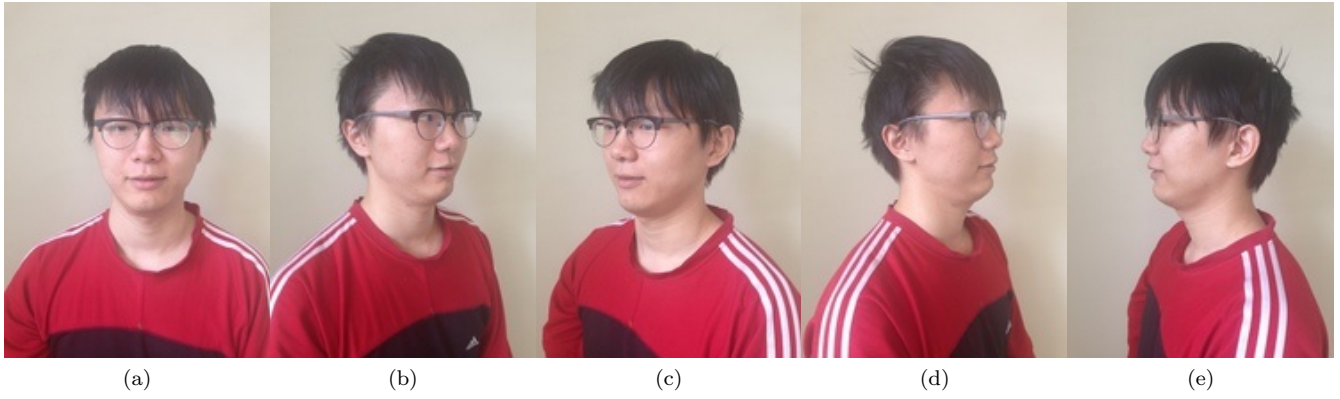
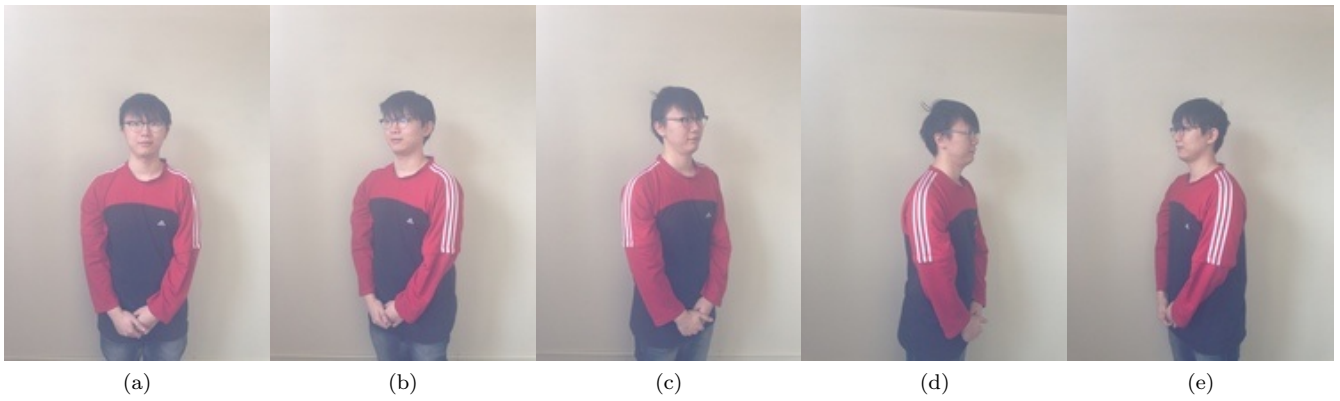Figure 1: Training images at the close, medium and far scales.

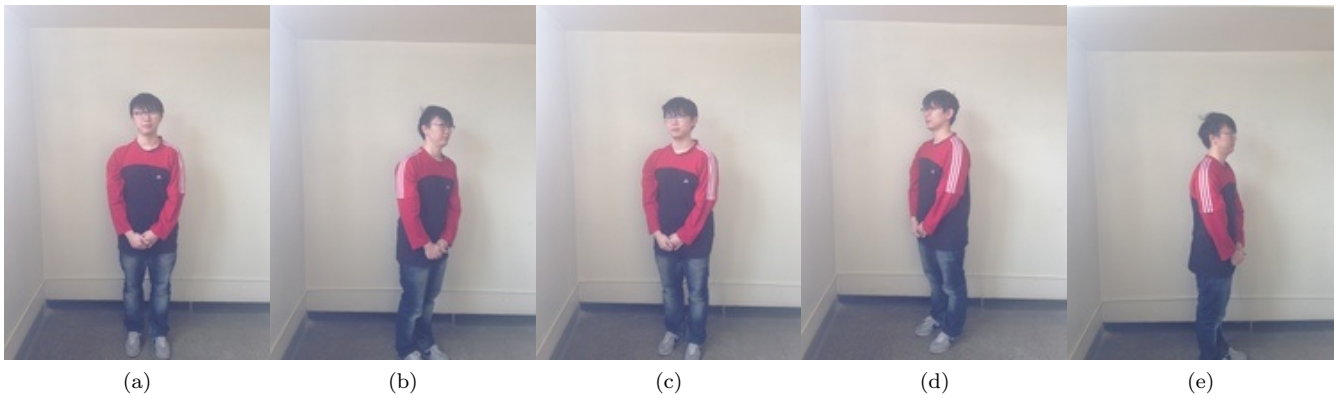Figure 2: Training images at the medium scale.
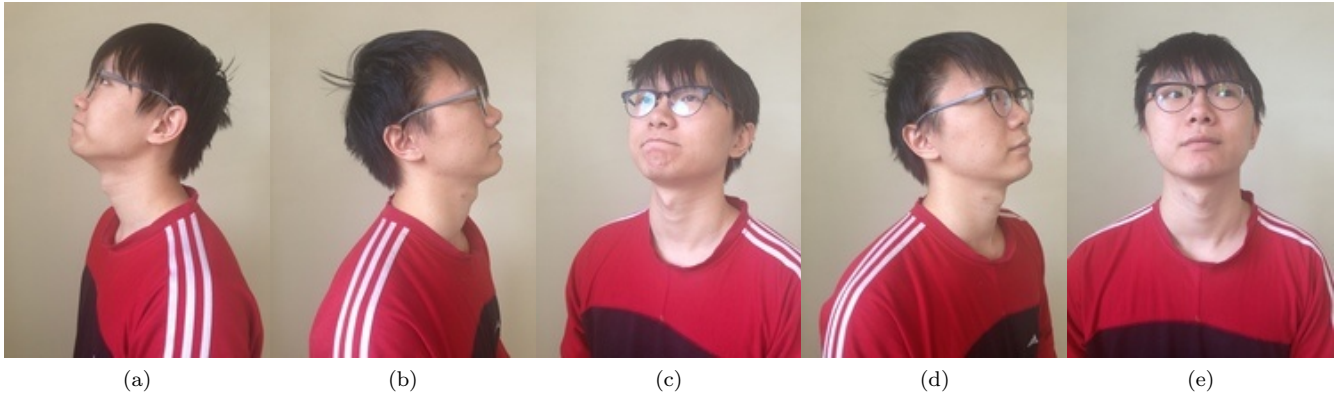

Figure 3: Training images at the far scale.

| (a) | (b) | (c) | (d) | (e) |

Figure 4: Testing images of the subject with their head facing upwards.

| (a) | (b) | (c) | (d) | (e) |
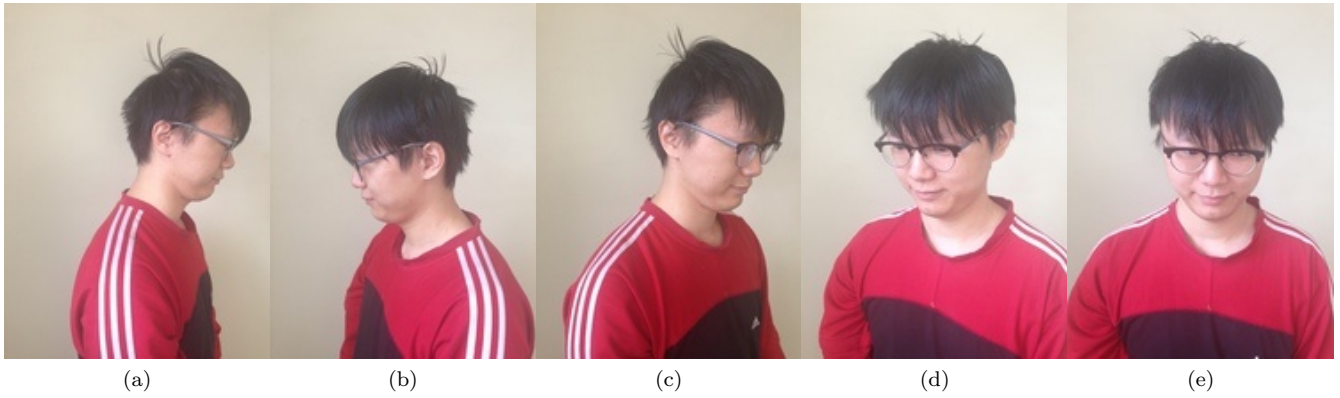
Figure 5: Testing images of the subject with their head facing downwards.
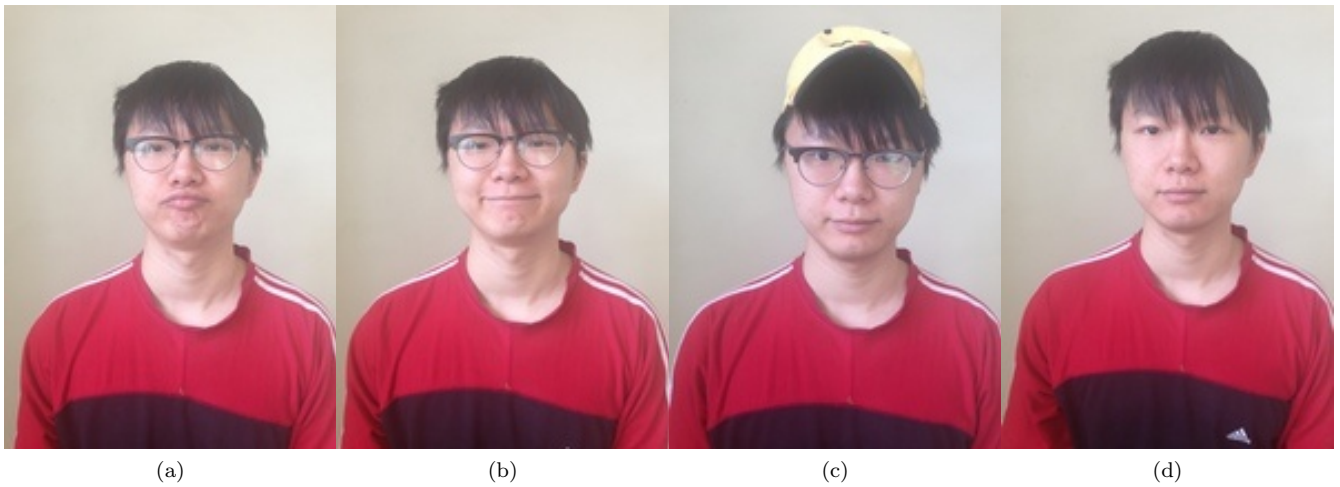

| (a) | (b) | (c) | (d) |

Figure 6: Testing images of the subject with accessories and different facial expressions.
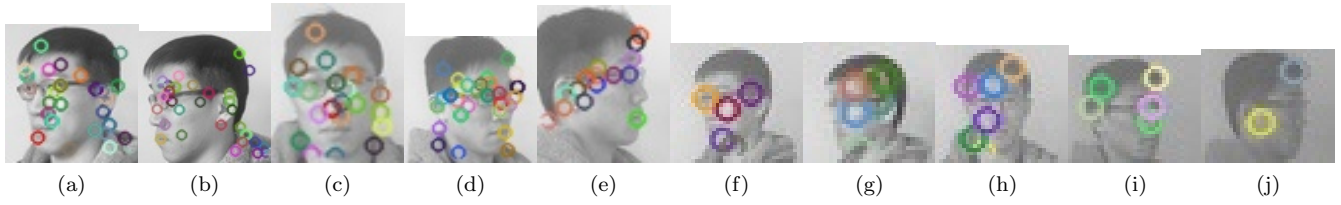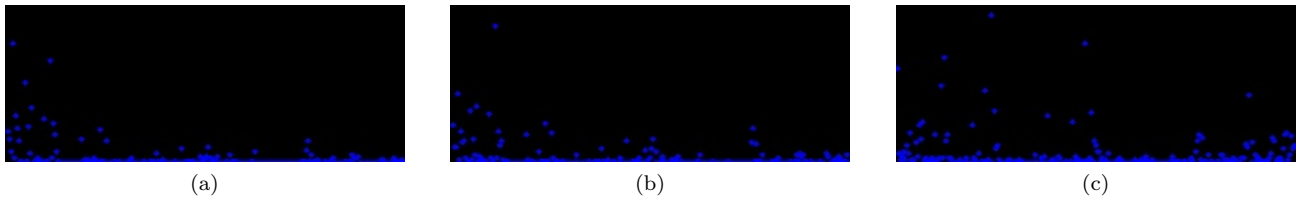
Figure 7: SIFT Features for 10 selected faces.

(a)   (b)   (c)

Figure 8: Three examples of region histograms for a given training image.

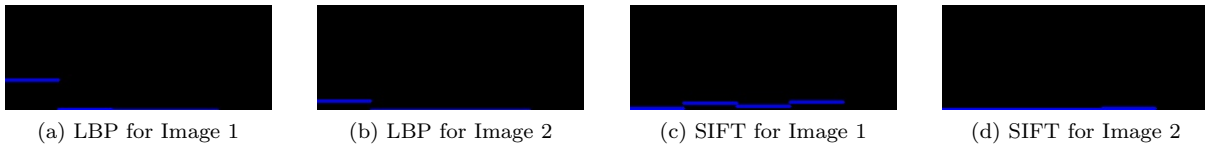(a) LBP for Image 1   (b) LBP for Image 2   (c) SIFT for Image 1   (d) SIFT for Image 2

Figure 9: Histograms representing the codewords for SIFT and LBP for two select images.