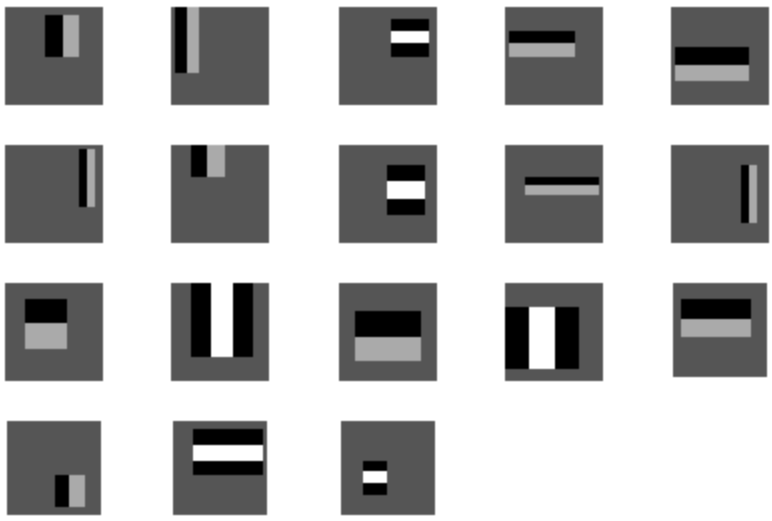
Assignment 3 TBMI26
Linus Mellberg (linme560) Lukas Gillsjö (lukgi451)
January 30, 2013

Important features:

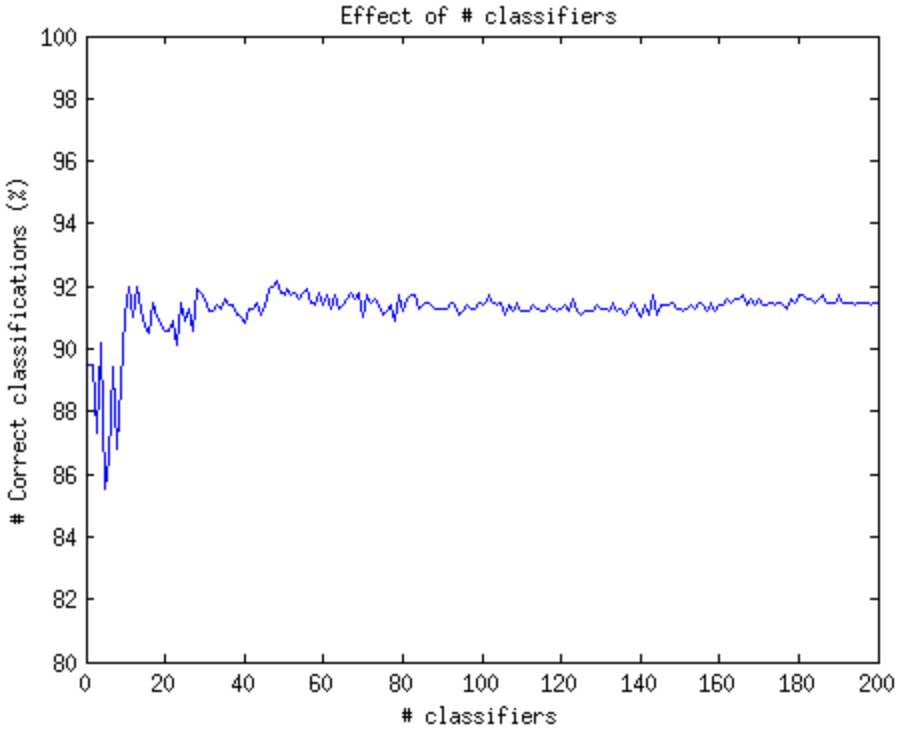


It’s hard to say why some of these are important, but some that makes sense are the 3rd, 4th, 12th, 14th and 17th feature. 12 and 14 checks for the contrast between the middle of the face, which often are more lit, and the sides of the face, that often are more in the shadow. The 3rd, 4th and 17th may be used to identify the contrast at the eyes. Some may also be used to check for the contrast between the mouth and the rest of the face, and between the lower and upper parts of the face.

Hard to classify

The two images below contains some of the images that were hard to classify and also some of the correctly classified images. The faces that were hard to classify often seems to be very dark or very bright. A lot of the persons in them also have glasses. Its hard to know exactly what makes these images hard to classify, but dark or bright images means that the pictures has less contrasts and this is what the Haar features detect. The nonfaces that are incorrectly classified seems to have a lot of contrasts in them. If we're unlucky some of these contrast is exactly what the classifier looks for in images of faces and the images are wrongly classified.

Effect of # classifiers



The best accuracy we could achieve was about 92%. As we see in the graph above, it seems like about 50 classifiers are enough. After that, we don't really get any increase in correct classifications.