

UG Exam Performance Feedback

Third Year

2018/2019 Semester 2

COMP37212 Computer Vision

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Comments Question 1) There were many good answers to this question, although there was some confusion between eigenfaces and shape alignment used in other PCA based models. Some people were not totally clear as regards the exact differences between eigenfaces/ACM/ASM/SSM/AAM, which is why there was a useful table provided in Lectures.

There were a few answers where a common error seems to indicate that despite my specific warnings in Lectures, some people may have been using study material obtained elsewhere that was NOT correct.

Another common error was people confusing eigenfaces with the eigenvalues used in the Harris corner detector. As before, where people who were in the right area tended to loose marks was in not providing enough precise detail (where it was asked for), and in not answering the actual question. Although as I have noticed before, many people remembered diagrams from the Lectures, and attempts to reproduce these helped greatly with people managing to produce concise, useful answers. People who tried to answer without using any diagrams or any equations had a harder time trying to construct a precise answer, and it usually took them more writing than those who managed to recall diagrams/equations in some recognisable (if not totally correct) form. I did advise on this point in the revision session.

Question 2, part a) This was mostly well done, although some people did get confused and tried to use a mixture of greyscale methods (e.g. edge detection), and binary methods (e.g. thresholding). There were many good answers, and some novel and inventive ones, but only a few people remembered that binary images usually need to be cleaned-up, after thresholding or after skeletonization. This was shown in the Lectures. Where most people lost marks (as usual), was in failing to provide enough precise DETAIL, or failing to answer precisely what was asked in the question.

Question 2, part b)

2. (b)(i) Some students did not realise that the k-means algorithm will NOT cluster correctly the data even if you use $k=3$.

2. (b)(ii) Almost all students stated that EM will be able to cluster the data set into correct clusters however many failed to explain the correct reason for this.

Question 3.

Generally, students did very well with some students gaining full marks. Few points that are worth mentioning:

3. (a) interest points are NOT the same as local features!

3. (b) For full marks, students should have briefly explained what a 'visual word' is and that you needed to match the extracted local features (SIFT) to the 'closest' visual word before deciding if a motorbike is present or not.

3.(c) Few students, although they noted the 'need' to find corresponding points in the two images, they DID NOT give details as to HOW such corresponding points can be found and/or matched. They should have named a method and briefly described it.
