Examination Feedback for EEE6081 – Visual Information Engineering
Spring Semester 2010-11

Feedback for EEE*** Session: 2010-2011

Feedback: Please write simple statements about how well students addressed the exam paper in general and each individual question in particular including common problems/mistakes and areas of concern in the boxes provided below. Increase row height if necessary.

General Comments:

Most parts of the exam paper were answered well. The most common mistake was not reading the questions carefully and answering to what the question has not asked. Specific comments for each question are as follows:

Question 1:

This is the second most popular and the best performed question. The question examines the fundamental concepts of transforms and their usage in image and video. Parts a) and b) were answered well. In Part c) majority of the answers failed to mention that y0 and y1 are down-sampled low pass and high pass. Some answers just stopped saying that but did not describe their characteristics and features. Part d) and f) concerns about Matrix-based implementation of the wavelet transform. Most students failed to answer them accurately. Part g) is concerned with extending them as a full tree wavelet packet transform to the images. Most students just wrote the answer to previous years question, which was on dyadic transforms. Not many students identified how to implement the full tree packet transform.

Question 2:

This question was the least popular question. However, those who attempted it, performed well. Parts b), f) and g) were poorly answered. In part b) students fail to carry out a simple matrix multiplication and derive the polyphase transform. In part f) most students fail to identify to replace the single component predictor and the update with the average of the two neighbours. In part g) most answers did not consider the motion in the video and thus motion compensated temporal wavelet transform. Parts a) c) d) and e) were answered well.

Question 3:

This is the most popular question. Most of the part a) solution only included the first level of transform and failed to mention that the low pass signal is repeatedly decomposed using the single-level pyramid. Parts c, d and e were answered well. However, parts f and g were not answered well. These two parts were based on the pyramid transform. However, it appears that most students had not read the question carefully and answered considering the wavelet transform.

Question 4:

The performance in this question was very poor. In Part a) was very poorly answered. Students did not explain the role of wavelet transform in scalable image coding. Instead the answers were mostly focusing on explaining scalability. Part b) also lacked proper explanation of motion estimation process. Parts e) and f) were poorly attempted. Students failed to appreciate that B frames are not used as reference frames.

Question 5:

Question 6:

Question 7:

Question 8: