Exercise: Image and Video Processing

Sheet 3 – Video Shot Detection and Condensed Representation

Exercise 1

Read the article "**Video Shot Detection and Condensed Representation**" and answer the following questions. It is not necesarry that you understand all details from Section "*Specific Shot Boundary Detection Algorithms*" to Section "*Hierarchical Skimming*". We will discuss the paper (especially the first part of the paper) during the next exercise:

a) Describe the structure of this paper? If you want to write a Bachelor or Master thesis, which sections would be similar?

b) Write down one question concerning the paper and give a short answer to this question. Send me an email with the question and answer until Monday evening. We will discuss all questions on Tuesday.

Answer the following questions:

c) Why is it so complicated to search specific content in videos? Compare videos with other media.

d) Explain Figure 1.

e) Name 3 major problems of shot detection.

f) Name and describe features that can be used to describe the similarity of frames.

g) Which part of a frame could be used to calculate a similarity value?

h) What temporal window size would you recommend for shot boundary detection?

i) Describe 4 detection methods to classify shot boundaries.

j) Explain the 4 types of condensed representation shown in Figure 4.

k) Describe techniques to evaluate the performance of shot boundary detection and condensed representation.

l) Why is condensed representation much more challenging compared to cut detection?