Video Coding

Seminar 2

SS 2019

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Office hour: Tuesday 10^{00} – 11^{00} and 13^{00} – 14^{00}

Homework assignment

- Use the video encoder framework from Homework 1
- Implement the 4:2:0 chroma sampling scheme (see Lecture 2)
- Use the 2-D version of a lowpass filter (from Lecture 2)
- Then use the pyramidal filter kernel, with a suitable size for the needed sampling factor (in the Lecture N=8)
- Show the results of downsampling and 2 versions of the lowpass filters in either separate windows or switching between them using keyboard (**only Cb and Cr**).
- Save captured video into `videorecord_DS.txt` (**for pyramidal filter kernel, all Y, Cb and Cr**)

Homework assignment

- Do it in such a way that you **reduce the size** of the compressed file (`videorecord.txt`) by avoiding storing known zeros
- What is the compression factor (before/after) that you can achieve?
- Open saved video from .txt file and display it in decoder part
- How does the perceptual quality look like?

Homework assignment

- Does it look good to the human eye?
- Can you see a difference to before? And if so, in which sense?

In order to evaluate your results through HWs use either the same capturing time or the same video file.

Homework presentation

- Imshow Cb and Cr components after downsampling
- Imshow Cb and Cr components after applying simple lowpass filter and pyramidal lowpass filter
- Print into console the file name with the saved **original** video (Y, Cb, Cr) and its size.
- Print into console the file name with the saved **Downsampled** video (Y, Cb, Cr) and its size.
- Imshow in the decoder reconstructed RGB video from "`videorecord_DS.txt`"