Slides Media Data Formats

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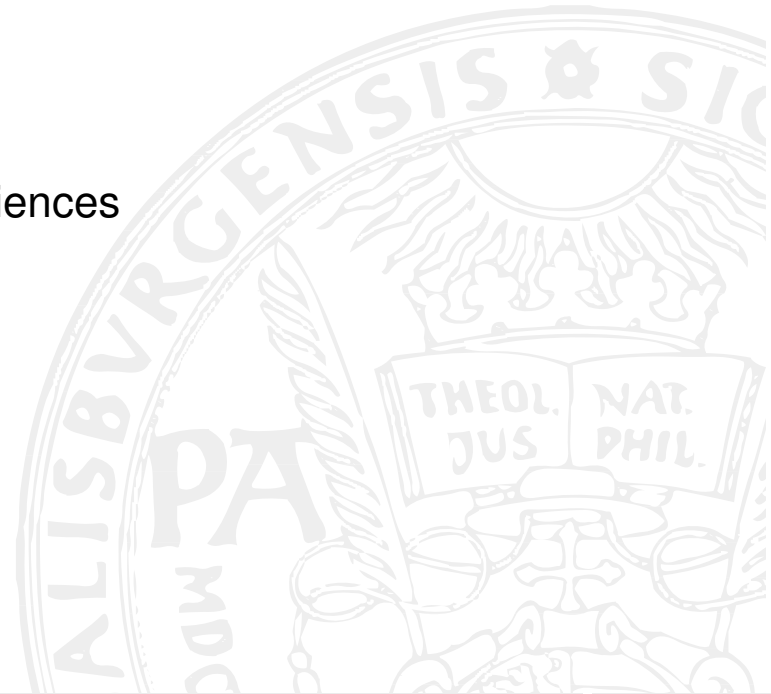

Questions for Lecture Notes Section 3.2.3 - 3.2.4

1. Pls describe the concepts of “adaptive coefficient renormalisation” and “Flexbits”.
2. What is “spatial” and “frequency” mode in JPEG XR ?
3. Pls explain how the Sierpinsky triangle is generated by repeated copy/scale operations.
4. How can we generate other geometrical figures ?
5. What is the theoretical background of stable attractors ? What is a contractive mapping in this context ?
6. What is the motivation to consider IFS for compression ?
7. Try to formulate the collage theorem and explain its importance for finding appropriate mappings.

Questions for Lecture Notes Section 3.2.4

8. What is the “inverse problem” in fractal compression ?
9. Why can typical images not be represented by an IFS ? How is this solved ?
10. How does grayscale come into play ?
11. PIs describe the algorithmic approach to find PIFS parameters (related to ranges and domains).
12. What is actually stored in the fractal file ?
13. How does fractal decoding work ?
14. Describe the way quality / bitrate can be controlled in fractal compression.

Questions for Lecture Notes Section 3.2.4 - 3.2.5

15. Discuss the pros and cons of different image partitioning schemes in fractal compression.
16. Compare the rate-distortion performance of fractal compression to its competitors.
17. What are the pros and cons of fractal compression itself ? Where can it be applied successfully ?
18. Describe ways how to speed up the encoding part of fractal compression.
19. Describe similarities and differences between VQ and fractal compression and decompression.
20. Explain the LBG procedure for VQ codebook creation.
21. Is there any media standard involving VQ ?

Questions for Lecture Notes Section 3.2.6

22. What is the major design goal of BTC ?
23. Which data parts are actually encoded in BTC ?
24. What are the advantages and disadvantages of BTC ?
25. Overall, what is the “best” lossy image compression standard ?
26. Try to define winners in the categories of R/D performance, speed, memory consumption, ease of hardware implementation, and technological uniqueness !