

Image Compression and Packet Video

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Text: Introduction to Data Compression, Khalid Sayood, Morgan Kaufman, ISBN 1-55860-346-8, 1996.

Lecture	Topic	Date	Reading
1	Introduction to Image Coding Lab Briefing	Sept 11, 00	Chapter 1, 2, Matlab Data
2	Two Dimensional Sampling and Convolution, Data Characteristics and Quantization	Sept 18, 00	Lecture Notes, papers, Chapter 8
3	Entropy and Entropy Coders	Sept 25, 00	Chapters 2, 3
4	Predictive Coders, DPCM, Delta Modulation	Oct 2, 00	Chapter 10
5	In Class Lab (Help with labs)	Oct 9, 00	
6	Transform Coders (DCT Based)	Oct 16, 00	Chapter 12
7	Hybrid Coders, Predictive Transform Coders	Oct 23, 00	Chapter 12
8	Subband Based Coders, Wavelet-Based Coders	Oct 30, 00	Chapter 11
9	Subband, Wavelet Based Coders (continued), Vector Quantizers (VQ)	Nov 6, 00	Chapter 9
10	VQ (continued), Introduction to Video Coding	Nov 13, 00	Chapter 14
11	Video Coding (Motion Estimation)	Nov 20, 00	Chapter 14
12	Motion Compensated Transform Coding - Video Compression Standards	Nov 27, 00	Chapter 14
13	MPEG -4 Video Concepts	Dec 4, 00	MPEG4 Standard http://www.cseit.it/mpeg/standards/mpeg-4/mpeg-4.htm
14	In Class Lab (Demo of Finished Labs)	Dec 11, 00	Review Final Exam

Lecture notes, lab assignments and instructions can be downloaded from the Class web site:

<http://aplcnmp.apl.jhu.edu/Notes/Geckle/525759>. Documents will be in Adobe Acrobat format (pdf). Print out the lecture notes before the class. Please notify Will Geckle if you are not able to printout the notes.

Grading: Grades will be determined by the number of lab projects completed and a final exam.

Final exam will be take-home, open book. The exam will be provided to you sometime after mid-term and will be due on the last class.

Grades: Pass final exam plus....

1. Six of the Nine Lab Programs (with no extra credit): C
2. Eight Lab Programs (with two extra Credit): B
3. At least 6 of the extra credit parts and all nine labs: A

Failing the final (highly unlikely) reduces your grade by one (e.g., A -> B).

Deliverables will be the m-files (and data files if required), on 3.5 inch floppy disk. Listings are also desired. In some cases, a short writeup may also be needed (results of the lab). Softcopy on floppy disk is acceptable. Where appropriate, the labs should be demonstrated.

Warning: Do not postpone working the labs . You should be working on the labs during the entire semester. All labs must be demonstrated before the final class of the semester.