EE225B – Digital Image Processing

Information Sheet

Lectures: Wednesdays and Fridays, 9:30 – 11:00 am
203 McLaughlin

Lecturer: Professor A. Zakhor
507 Cory Hall
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Office hours: Wednesdays, 11:00 - 12:00 pm, 507 Cory

Course Assistant: Rosita Alvarez
253 Cory Hall,
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Course handouts: Handouts not picked up during lectures can be found with the course assistant.

Texts:
1. J. S. Lim, Two-Dimensional Signal and Image Processing, Prentice Hall, 1990. (required)

Other useful references:

Outline of Topics:
1. Image reconstruction from partial information
2. Two-dimensional (2-D) Fourier transform and z-transform;
3. 2-D DFT and FFT, FIR and IIR filter design and implementation.
4. Basics of Image Processing techniques and perception;
5. Image and video enhancement
6. Image and video restoration
7. Reconstruction from multiple images: super resolution
8. Image and video analysis: Image Representation and models; image and video classification and segmentation; edge and boundary detection in images
9. Image compression and coding
10. Video compression
11. Image and Video Communication
12. Image and video rendering
13. Image and video Acquisition

Homework:

Homework will be issued approximately once every one or two weeks. They will either consist of written assignments, Matlab assignments or C programming assignments. Homework will be graded, and will contribute 50% to the final grade. Homework handed in late will not be accepted unless consent is obtained from the teaching staff prior to the due date. There will be a project that will constitute 50% of your grade. The project can be individual or in a group. You are to submit a proposal to the instructor by the end of February. More details on the project will be provided later, and a list of suggested topics will be provided.