Outline
CS376 Computer Vision
Monday, January 24, 2011

Linear filters

Image formation

- Light to discrete pixel arrays
- Images in Matlab

Image noise (as motivation for linear filtering)

- Types of noise

Correlation/convolution filtering with linear filters

- 1D and 2D examples
- Definition of correlation
- Implementation detail: handling boundaries
- Smoothing filters
    - Averaging/box filter
    - Gaussian filter
    - Impact of filter width in smoothing
- Definition of convolution
- Examples: predicting linear filter outputs
- Definition of convolution
- Properties of convolution
- Separability

Median filter, an example of a non-linear smoothing filter

Application: hybrid images

Recap, brief take home questions