

## 381V Visual Recognition: Outline of lecture for Sept 14, 2016

- I. Wrap up CNNs
  - a. Connections to SIFT, spatial pyramids
  - b. ImageNet challenge
  - c. Tasks beyond image labeling (teaser)
- II. Mid-level representations
  - a. From gradient maps to edges
  - b. Texture
    - i. Filter banks
    - ii. Textons
  - c. Grouping cues
    - i. Gestalt
    - ii. Grouping and illusions
  - d. Segmentation
    - i. Clustering pixels
    - ii. Texture gradients
  - e. Ongoing topics
    - i. Multiple segmentations
    - ii. Top-down segmentation
    - iii. Regions to surfaces
    - iv. Category-independent “object-like” regions
    - v. Video object segmentation

External paper presentations:

- CPMC for object segmentation
- Semantic segmentation with CRFs and CNNs

Experiment:

- R CNN object detection