

## Outline

CS376 Computer Vision

Monday, April 11, 2011

Reminder, Pset 4 due April 20

### Window-based models for generic object detection

Recap: supervised classification

Basic pipeline for generic category recognition with a window-based representation

- Representation choice: pixels, gradients, colors
- Discriminative classifier choice
- Sliding windows to generate candidates
- Classifier to score candidates

Boosting classification algorithm

- Intuition
- Training process
- Pros and cons

Viola-Jones face detector: a prime example of window-based object detection

- Overview
- Feature definition: rectangular features, integral images
- Selecting discriminative features among all candidates with Adaboost
- Adaboost details
- Attentional cascade of classifiers: definition, how to train with Adaboost
- Summary of detector pipeline
- Example results

Strengths and weaknesses of window-based detection paradigm