CS354

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Feature Based Object Recognition

- Basic Steps:
  - Detect Keypoints
  - Calculate feature vectors
  - Look for matching features
  - Infer object location and pose from matches (not 3d)

SIFT Based Object Detection

- Scale-invariant feature transform (SIFT)
- Detect Keypoints
    - Look for peaks in the difference of gaussian at multiple scales.
    - Gaussian Pyramids Tutorial
    - SIFT Tutorial
- Assign an orientation
    - Use a histogram of image gradients...
- Calculate feature vectors/descriptors
    - Distinctive Image Features from Scale-Invariant Keypoints, David Lowe, 2004.
- Full Example

Color Histogram Based Object Recognition

- Color histogram tutorial
- Example ...