

## Outline

CS376 Computer Vision

Wednesday, March 30, 2011

### Calibration (completing stereo)

- With calibration object
  - Solve for projection matrix to relate scene points to image points
- Weak calibration
  - Solve for fundamental matrix to relate image points to image points between views
  - Use of RANSAC

Example applications and demos

- Edges in depth maps for segmentation
- Human body tracking by fitting cylinders
- Virtual viewpoint interpolation

### Indexing local features and applications to visual search

- Visual words: Quantizing local descriptor space
  - Connection to textons
  - Issues in visual vocabulary formation
- Bag of words representation and matching
  - Comparing bags of words
  - Tf-idf weighting
  - Video Google example
  - Scoring retrieval results with precision recall
  - Pros and cons
- Extensions:
  - Spatial verification
  - Query expansion

Summary