Outline
CS376 Computer Vision
Monday, January 31, 2011

Edges, contours, and binary image analysis

Edge detection

- Basic pipeline: smooth, enhance, localize
- Thresholding a gradient image for edges
- Canny edge detector
    - Non-maximum suppression
    - Hysteresis
- Low-level edges vs. perceived contours

Chamfer matching: comparing shapes from edges

- Definition of the Chamfer distance
- Computing Chamfer efficiently with the distance transform
    - Definition of the distance transform
    - Efficiently computing the distance transform
    - Using to get Chamfer distances against template
- Properties of Chamfer matching

Binary image analysis

- Thresholding to create a binary image
- Morphological operators
    - Dilation, erosion
- Connected components analysis
- Region properties of connected components
- Example applications

Summary

Pset 1 out tonight, due in 2 weeks