Pb-lite boundary detection

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Overview

- Input image
  - Filter bank
    - Filter + k-means
  - Grayscale
  - Texton map
    - Brightness image
  - Half-disc masks
    - Histogram + chi-square distances
    - Texture gradient + brightness gradient
    - Edges
  - Sobel / Canny edge detection
  - PB-lite output

http://cs.brown.edu/courses/cs143/2011/proj2/
Brightness Gradient

Original Image

Brightness Gradient
Texture Gradient using Oriented Gaussian Filters

In short these are derivatives of gaussian filter which are steered to different orientations
Texton Map

Original Image

Texton Map
Half Disc Masks to speed up processing

Left - half discs

Right - half discs
Using the half discs

(L==k), k belongs to (1,K)

Then apply chi_sqr formula
Use Canny score as base and hack your score!

Pb_Edges = (tg+bg).* (Canny_Edges);