Weekly Report

Proposed Framework

20141203

Emotional cropping

- Problem Fomulation
  - Input: an image (and a specific emotion type)
  - Output: a (or a set) retargeted/ cropped image

- Focus on:
  - Color distribution / composition

- Limitation:
  - Not consider the semantic information

Compared to

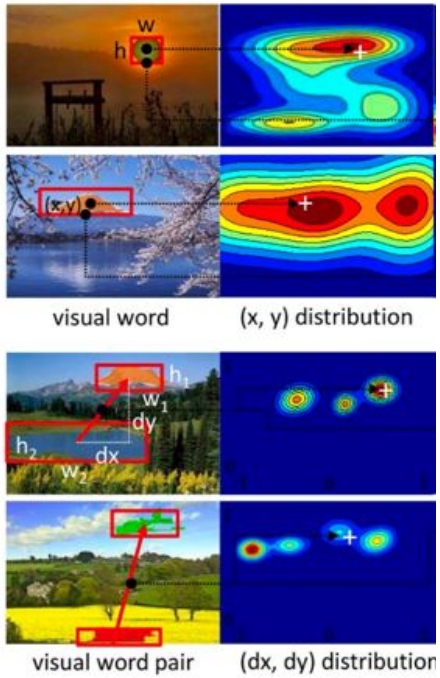
- Content-Aware Cropping
  - Find the most important/salient region
  - Use aesthetic rules to find the best cropping.
- Image Emotion(Affect)
  - Use some features to descirbe emotion
    - color, textute, line, harmony...etc
  - Use SVM/SVR to catogorize/score the image

Dataset

- IAPS Dataset
  - http://csea.phhp.ufl.edu/media.html

Training Method

- Training data: images with emotion label.
- Segmentation:
  - For an image, over-segment it to several parts.
  - Use color feature to merge the segments in to larger one.
- Construct words:
  - HOG (k-means)
  - Color
  - Shape*
- Construct GMM:
  - For word
    - location
    - size
  - For word pair
    - relative location
    - relative size



Training Method

- Weight of words
- Weight of word pairs

Experiment 1: emotion crop

- Given an input image
  - For an (or each) emotional type, interest region, output a cropped image
  - Ground truth: user study
- Method:
  - With the GMM of the emotion type
  - Find a cropped region that maximize the overall probabilty.

Experiment 2: emotion map

- Given an input image
  - output a map for entire image, indicate the emotion in different area
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Experiment 3: emotion transfer

transfer an emotion of an image to another

Experiment 4: Emotion Adjustment

- Detect the human emotion in the image
- Adjust the composition according to the emotion