High-level attributes of images: How memorable is an image?
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Motivations

How to measure subjective attributes?

What content makes an image memorable?

Understanding memorability

Database

Prediction algorithms

Applications

Memory Game

[665 participants on Amazon’s Mechanical Turk.]

What content makes an image memorable?

Object score = (prediction when object included in image) – (prediction when object removed)

Predicting image memorability

Object annotations: SVM/Regression with non-linear kernels on following features:

1) Scene annotations
   - Aquarium, indoors
   - Beach, sky
2) Object annotations
   - Chair
3) Attribute annotations
   - Purple, peaceful eye contact
4) Global image features
   - SIFT, HOG, SSIM
5) All features

Automatic predictions from global image features

Understanding memorability

Applications and future directions

Retrieve better images from search

Design mnemonic aids

Diagnose memory problems

Summarize photo album or video

Make an image more memorable

Understand human memory

Wide range of memorabilities and high inter-subject consistency.

Predictions of memorability for each object scored according to object score correlation per image.

Image rank N, according to specified group = 0.75

Group 1

Chance

Group 2

Accuracy of 25 images centered

Understandable attributes describing each number, size, and rough position of objects, scenes, and appearance of people.

Understanding scene annotations (computation per 2222 photographs from SUN database)