DAM Homework (4)
2014-11-11
Image similarity computing

- Given: 10 images, $I_1, I_2, \ldots, I_{10}$
- Goal:
  - compute similarities between $I_1$ and $I_i (i = 2, \ldots, 10)$
  - find the most similar image to $I_1$
The simplest solution

- Image Feature vector: \( I_i \rightarrow F_i \)
- RGB based moments, 9 float numbers
- Similarity:
  - dot product: \( \frac{F_i \cdot F_j}{\|F_i\| \|F_j\|} \)
  - distance based: \( \exp(-\|F_i - F_j\|^2) \)
Better ways ...

- Position and structure
- Better color spaces, Lab/HSV/Yuv ...
- Texture features, Gabor filter bank
- Better similarity computing
  - advanced machine learning methods
Constraints

• Use Node.JS and opencv/pngjs
More considerations

• How about work on 1,000 images?
• How about work on 1,000,000 images?
• Other media:
  • Audio ???
  • Video ???
  • HTML pages ???
user: stu
pass: 2014
deadline: 2014-11-25