DAM Homework (4)
2013-10-29
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 python and PIL
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: 2013
deadline: 2013-11-10