Homework #2

1. **Online CBIR systems overview**
   1. We use table a.1 to show the expression of the CBIR system that we try online.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Systems | CIRES | ALIPR | CORBIS | TILTOMO |
| Query | 1.query.jpg | Text: flower | Text: flower | Text: flower / Image: flower |
| Results | 1.result1.jpg1.result2.jpg1.result3.jpg | 2.result1.jpg2.result2.jpg2.result3.jpg2.result4.jpg | 3.result1.jpg3.result2.jpg3.result3.jpg | 4.result1.jpg4.result2.jpg4.result3.jpg4.result4.jpg |
| Features | Color Histogram | Image Semantics | Image Semantics | User Tags color/theme |
| Response | ✿✿✿ | ✿✿✿ | ✿✿✿ | ✿✿ |
| Database | ✿ | ✿✿✿ | ✿✿✿ | ✿✿✿✿✿ |
| Humanity | ✿ | ✿✿✿✿ | ✿✿ | ✿✿✿ |
| Interface | ✿ | ✿✿✿ | ✿✿✿ | ✿✿ |
| Interaction | ✿ | ✿✿✿ | ✿✿ | ✿✿✿ |
| Overview | ✿ | ✿✿✿✿ | ✿✿ | ✿✿✿ |

Table a.1

The table a.1 shows several items that we use as a judgment for a CBIR system. We list and explain them. The more amount of flower icon represented the better result:

* + 1. Query: The input information.
    2. Results: The query result by picking the first three or four ranking.
    3. Feature: The feature we gauss on which they use in the system.
    4. Response: The time we hold until the pages stop update.
    5. Database: The images size they are finding with.
    6. Humanity: The expected level that result suit for my query.
    7. Interface: The style sheet of the website.
    8. Interaction: The amount of response that n-user can do with the query image.
    9. Overview: The ranking we give for these CBIR systems.

We have several interesting discoveries:

* + 1. The way to implement a `Image Semantic’ searching engine is `Automatic Generated Tags’, both ALIPR and CORBIS use this approach. However, ALIPR do better than CORBIS. For example, we query `flower’ and `flowers’ get different results in ALIPR but the same in CORBIS. The different is one we indeed have `many flowers’. The reason may be that ALIPR define `flowers’ and `flower’ as different set of tags.
    2. The response of n-user may be a good way to training data. We find that ALIPR let user can give image an `emotions tags’. This property may help the system automatically generated the tags.
    3. TILTOMO is powerful to deal with extreme large data scale by collect the images from Flickr, but it has lots of noise for query results. For example, the forth query of TILTOMO isn’t like a flower. When we check that picture on Flickr, found out that it was just a picture with that tag `flower‘. Maybe the author thinks it was related with flower, but it is not make sense for n-user.
    4. We also try LIKE.COM, but it doesn’t work because we do not belong to U.S.A IP address. But this website has some cool idea, like they can query by a region of sample image!
  1. Every image retrieval system has its main purpose, otherwise it won’t attract user to upload image or work on this system. Here we think about some interesting idea:
     1. Work with telecom and combine online shopping by using image retrieval system. Say, you can take a picture for a bag, and send it to IR system to query the information of the bag.
     2. A navigation system to automatically recognize environment and find the safe path.

1. **System function : fv\_color**
2. **System function : fv\_texture**
3. **System function : fv\_sim**
4. **System function : im\_query**
5. **User Interface Issues**