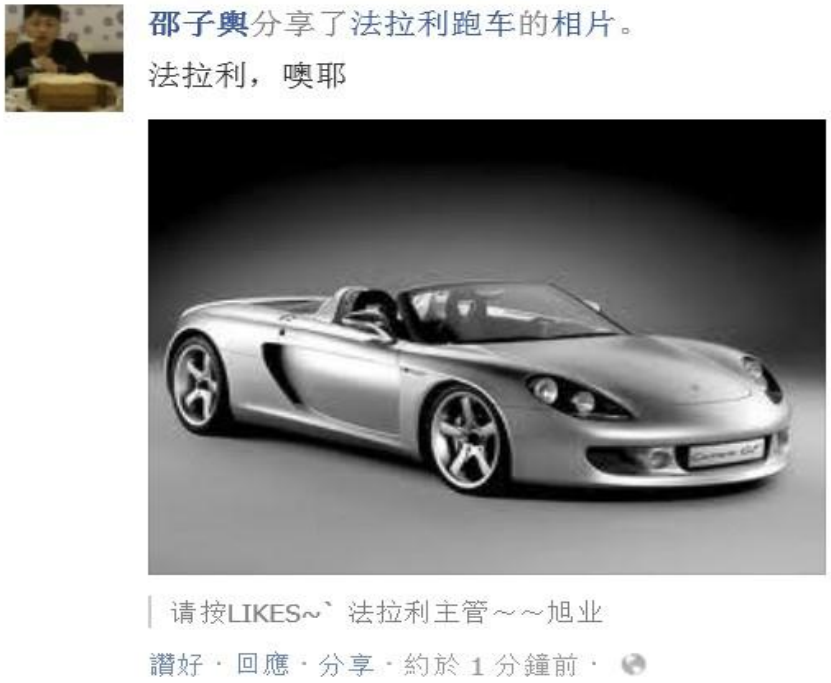
How can we identify smaller granularities



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Background and Problem

- Background
  - Image is worth a thousand words
  - Photo tagging is unreliable
  - Improve social network recommendation accuracy

- Problem
  - There’s no clever method for a detail matching.
  - Algorithm is complicated
    - Database is huge
    - Too difficult to compare
  - Difficult to identify similar things from different angles

The step of a variant's image identification as an example

- Use the **Image Edge Recognition Technology** to find the main object in a picture.
- Find the **Logo Image** database of the certain object
- Use the **Mode Matching Technique** and **Figure Recognition** to find whether there is a logo as a feature of the object in the photos we need to analyze.
- Use the **Mode Matching Technique** again to find the consistency of photos

Methodology

Image characteristics extraction :

Color characteristics: will not be affected by rotation and translation of photos but couldn't donate the spatial distribution of the color.
Method: color histogram.
Texture characteristic: not base on Pixel, Statistical computing of multi-pixel in an area. Better noise immunity but Large deviation when the image resolution changes.
Method: Gray Level Co-occurrence Matrix (GECM).
Most popular.
Shape feature: retrieval based on the target but lack of mathematic model.
Method: Fourier shape doers, Wavelet Deor.
Space relationship features:
Method: estimation method based on machine learning.

Coding the feature info. and extract it;

Computing the similarity consistency.

- This technique can be used in many fields of our social media.

  And some of those as we mentioned before, they have been applied to Google Glasses, License Plate Recognition System, etc. These applications may predict the feasibility of our proposal.
- We are currently considering just one picture. To improve the accuracy, we can analyze all the photos shared by the user. Finding out the logo which has the largest times involved in the photos. Based on this logo, we can choose the picture which is the most proper to be recommended.

Take this photo below as an example. The circle represents the logo. If two logos appear simultaneously in a photo, there is a link between them. The size of the circle indicates the times of the logo involved in all photos is the largest. As the figure shows. So we can base on the blue circle in the centre and recommend the picture with the corresponding logo to the user.

Q & A

References

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