Differentiating singularity and multiplicity in web images

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**Problem**
- During object recognition of Google images, clusters of similar features are created.
- In clusters, there exists no differentiation between single and multiple objects.
- Multiple objects images do not contribute to cluster, either remove or extract single.

**Data Collection**
- Learn concept of 1 vs 2+ with Caffe using images of 1 object and 2,3,4 objects.
- 2.5 million training images from Google.
- Binary classification: 0/1.

**Architecture**

**Softmax Loss**

**Rankings**
- Probability ranking for class 1 (1 object)
- Probability ranking of class 0 (2+ objects)

**Future Work**
- Create a pipeline to improve weakly supervised learning.
- Retrieve proposals from learned image clusters.
- Run proposals through model for counting classification.
- Cluster proposals by extracting similar features.
- Original images discarded.