Similarity:

1. All have huge amount of images. ImageNet has over 1,500 million images. The ILSVRC competition hold every year has 1.2 million images, and about 5000 labels. Cdiscount has around 15 million, much less than ImageNet, but more than the ILSVRC competition. The labels for Cdiscount is around 5000.
2. Resolution. The average image resolution on ImageNet is bigger , but it is common to crop the original image to 256\*256 for better speed. Cdiscount images are 180\*180. So it is comparable in resolution.

So from the comparison, the Cdiscount image classification is very similar to ILSVRC competition, but bigger in image size.

A somewhat different aspect is that Cdiscount has multiple image for one product, but as I checked, it is not frequent. Average pic/product is 1.3. So it might not have a major impact in how we deal with the challenge.

Given the high similarity between Cdiscount and ILSVRC competition, it’s naturally to look into the history of ILSVRC for ideas.

History of ILSVRC:

|  |  |  |  |
| --- | --- | --- | --- |
| Year |  | Top-5 error rate(%) | depth |
| 2012 | AlexNet | 16.3 | 8 |
| 2014 | VGGNet |  | 19 |
| 2014 | Inception Net v1 | 6.67 | 22 |
| 2015 | ResNet | 3.57 | 152 |
| 2016 | CUImage(ensemble) |  |  |

Time estimate:

GTX 1080

Cloud GPU computing resource selection:

Amazon: pricy and slow for on demand GPU instance(0.90/hour for Nvidia K80). 0.27 for Spot Instance.

Paperspace: 0.6 for Nvidia P5000

Floyd: pricy but the interface is really simple, only 2 hour of free GPU time.

Google: $0.74/hour for Nvidia K80. $300 of credit for use.

Use your own machine: a desktop with GTX1080 costs $1000+.

Conclusion: use Google.