**Image Recognition and Object Detection**

Every decade or so a new idea comes along that is so effective and powerful that you abandon everything that came before it and wholeheartedly embrace it. Deep Learning is that idea of this decade. Deep Learning algorithms had been around for a long time, but they became mainstream in computer vision with its resounding success at the ImageNet Large Scale Visual Recognition Challenge (ILSVRC) of 2012.

With such huge success in image recognition, Deep Learning based object detection was inevitable. Techniques like Faster R-CNN produce jaw-dropping results over multiple object classes. We will learn about these in later posts, but for now keep in mind that if you have not looked at Deep Learning based image recognition and object detection algorithms for your applications, you may be missing out on a huge opportunity to get better results.

## Image Recognition ( a.k.a Image Classification )

An image recognition algorithm ( a.k.a an image classifier ) takes an image ( or a patch of an image ) as input and outputs what the image contains. In other words, the output is a class label ( e.g. “cat”, “dog”, “table” etc. ). How does an image recognition algorithm know the contents of an image ? Well, you have to train the algorithm to learn the differences between different classes. If you want to find cats in images, you need to train an image recognition algorithm with thousands of images of cats and thousands of images of backgrounds that do not contain cats. Needless to say, this algorithm can only understand objects / classes it has learned.