Extract AlexNet or VGG feature? Caffe

Fine-tune AlexNet for new classes? Caffe

Fine-tune AlexNet for new classes? Caffe

Image Captioning with finetuning?

1. Need pretrained models (caffe,torch,lasagne)
2. Need RNNs(torch or lasagne)
3. Use torch or lasagna

Segmentation?(classify every pixel)

1. Need pretrained model(caffe, torch, lasagna)
2. Need funny loss function

If loss function exists in caffe: Caffe

If you want to write your own loss: Torch

Object Detection?

1. Need pretrained model(torch,caffe,lasagne)
2. Need lots of custom imperative code(not lasagne)
3. Use Caffe + python or Torch

Language modeling with new RNN structure?

1. Need easy recurrent nets(not caffe,torch)
2. No need for pretrained models(theano or tensorflow)

Implement batchnorm?

1. Don’t want to derive gradient? Theano or tensorflow
2. Implement efficient backward pass? Torch

Recommendation:

1. Feature extraction /finetuning existing models:use caffe
2. Complex uses of pretrained models:Use lasagna or Torch
3. Write your own layers:use torch
4. Crazy RNNs: use tensorflow
5. Huge model,need model parallelism:use tensorflow