Feasible Datasets for Testing Various Activation Functions

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ImageNet

- Misra's networks:

    - ResNet-50, DarkNet-53, DenseNet-201, ResNext-50

    - CSPResNet-50, Pelee Net, CSPPelee Net

    - CSP: Cross-Stage Partial uses DarkNet framework

        - http://openaccess.thecvf.com/content_CVPRW_2020/papers/w28/Wang_CSPNet_A_New_Backbone_That_Can_Enhance_Learning_Capability_of_CVPRW_2020_paper.pdf

    - Code unavailable

- Due to copyright concerns, need to send request to download images

    - http://www.image-net.org/download-faq

ImageNet (Continued)

- PyTorch torchvision library (https://pytorch.org/docs/stable/torchvision/models.html#classification)

- Supervised learning

  - AlexNet
  - VGG
  - ResNet
  - SqueezeNet
  - DenseNet
  - Inception v3

  - GoogLeNet
  - ShuffleNet v3
  - MobileNet v2
  - ResNeXt
  - Wide ResNet
  - MNASNet

MS-COCO

- Misra's model: CSPDarkNet-53 (code unavailable)

- List of object detection models: https://github.com/amusi/awesome-object-detection

- PyTorch torchvision library (https://pytorch.org/docs/stable/torchvision/models.html#object-detection-instance-segmentation-and-person-keypoint-detection):

  - Supervised learning

  - Object Detection: Faster R-CNN ResNet-50 FPN

  - Instance Segmentation: Mask R-CNN ResNet-50 FPN

  - Keypoint Detection: Keypoint R-CNN ResNet-50 FPN

  - Semantic Segmentation:

    - FCN ResNet-50 and FCN Res-Net 101

    - DeepLabv3 ResNet-50 and DeepLabv3 Res-Net 101

Unsupervised Learning

- Facebook AI Research paper: https://arxiv.org/pdf/1807.05520.pdf

  - Developed models based on clustering: DeepCluster/DeeperCluster

    - AlexNet and VGG architectures implemented

  - Tested on ImageNet, COCO, PASCAL VOC, and YFCC100M

  - Code: https://github.com/facebookresearch/deepcluster

- DeepMind CPC, Google Brain SimCLR, etc. may not be available

Natural Language Processing (NLP)

- PyTorch offers many datasets

  - Language Modeling, Sentiment Analysis, Text Classification, etc.

    - https://pytorch.org/text/datasets.html

  - PyTorch code for models not found

- fastai models: AWD_LSTM and Transformer

  - Transformer model uses activation functions, whereas AWD_LSTM does not

  - https://github.com/fastai/fastai/blob/master/fastai/text/models/transformer.py#L149

Other

- Pre-trained models for Places dataset: https://github.com/CSAILVision/places365

- SVHN model: https://github.com/aditya9211/SVHN-CNN