**title**

MobileNet optimization via Adaptively Connected Neural Networks.

MobileNet Improvement by Adaptively Connected Neural Networks.

MobileNet optimization via Asymmetric Convolution Blocks

**abstract**

This paper presents using the innovative Adaptively Connected Neural Networks(ACNet) to improve the classification accuracy of MobileNet V3 and the efficiency of training models, to provide more favorable solutions for mobile devices. Use the inverted residual with a linear bottleneck in the MobileNet V3 network model to use ACNet's theory to improve. It can flexibly change the global and local reasoning in the internal feature performance and enhance classification accuracy. To adapt to the unique needs of mobile devices. While the new model's accuracy on different data sets has been improved, the model training time has been reduced. The result of the CIFAR data set is: xxx. The prediction result xxx on the ImageNet data set.

**introduction**

Google's MobileNet significantly reduces the parameters of the model by using depthwise separable convolutions, which makes a meaningful contribution to porting to mobile devices. Although mobileNetV3 uses the inverted residual with linear bottleneck and squeeze and excitation structure, it has been improved by 3.2% compared with the V2 version in ImageNet classification. But the accuracy is still not comparable to other large-scale network models. How to improve the accuracy of MobileNet under the premise that the model volume is small enough has become the key to the successful application of deep learning in the field of mobile devices.

Simultaneously, with the large-scale application of deep learning in image classification and target detection, more and more models use CNN as a vital part of the model. However, the limitations of CNN itself have also been continuously confirmed. Because CNN only extracts information from local neighboring pixels, each layer inside the convolutional network does not have an excellent global overturning ability. Therefore, the convolution operation cannot distinguish two similar objects well. Adaptively Connected Neural Networks proposed by Guangrun Wang can effectively solve this problem. The author holds that the optimization and reconstruction of DWS in MobileNet by ACnet can effectively avoid CNN paying too much attention to the local reasoning phenomenon, to improve the accuracy. Guangrun Wang also proposed that using ACnet has the function of reducing the model training cycle. The training period of the MobileNet model after optimization in this article is reduced by xx compared to mobileV3. Make the deployment of the new model in the mobile terminal field more friendly.