# 一 slim api

## \_evaluate\_once

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| \_evaluate\_once  D:\work\stuff\modules\misc\sprd\_camera\alg\july\深度学习第四期\models-master\tensorflow-r1.11\tensorflow\python\training\evaluation.py  **针对给定的checkpoint评估模型.**  **每次调用\_evaluate\_once都会执行完eval\_ops一次.**  **可以用tf.contrib.training.StopAfterNEvalsHook中断它.**  **在eavl\_ops执行完后会执行一次final\_ops,这个final\_ops可以是一个tensor,一个tensor list, 一个tensor dict.** |

## slim.metrics.aggregate\_metric\_map

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| slim.metrics.aggregate\_metric\_map  D:\work\stuff\modules\misc\sprd\_camera\alg\july\深度学习第四期\models-master\tensorflow-r1.11\tensorflow\contrib\metrics\python\ops\metric\_ops.py  工具函数,提供组合功能.本身并没有算法.  传入的是一个tuples,可以是dict.把dict里的成员分成两部分,一个是value\_ops,一个是update\_ops,然后组合成zip.最终组合成dict返回. |

## as\_graph\_def

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| as\_graph\_def  D:\work\stuff\modules\misc\sprd\_camera\alg\july\深度学习第四期\models-master\tensorflow-r1.11\tensorflow\python\framework\ops.py  **Returns a serialized `GraphDef` representation of this graph**  thread-safe  可以用tf.import\_graph\_def来import这个graph. |

## tf.gFile.FastGFile

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| tf.gFile.FastGFile  是\_FileIO的wrap. |

## tf.image.convert\_image\_dtype

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| tf.image.convert\_image\_dtype  D:\work\stuff\modules\misc\sprd\_camera\alg\july\深度学习第四期\models-master\tensorflow-r1.11\tensorflow\python\ops\image\_ops\_impl.py  把image转成指定类型.一般是tf.float32类型. |

## tf.image.cental\_crop

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| tf.image.cental\_crop  提出图像的边缘部分.  Central\_fraction,取值(0,1]. 保留的图像中间的面积. |

# 二 Metric篇

slim.metrics 提供了很多模型评估指标的算法实现.

路径: D:\work\stuff\modules\misc\sprd\_camera\alg\july\深度学习第四期\models-master\tensorflow-r1.11\tensorflow\contrib\metrics\python\ops\metric\_ops.py

提供的条目如下:

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| def streaming\_true\_positives TP值  def streaming\_true\_negatives TN值  def streaming\_false\_positives FP值  def streaming\_false\_negatives FN值  def streaming\_mean 均值  def streaming\_accuracy 准确率  def streaming\_precision 精确率  def streaming\_recall 召回率  def streaming\_false\_positive\_rate FPR值  def streaming\_false\_negative\_rate FNR值  def \_streaming\_confusion\_matrix\_at\_thresholds  def streaming\_true\_positives\_at\_thresholds 在给定阈值下的TP值  def streaming\_false\_negatives\_at\_thresholds在给定阈值下的FN值  def streaming\_false\_positives\_at\_thresholds在给定阈值下的FP值  def streaming\_true\_negatives\_at\_thresholds在给定阈值下的TN值  def streaming\_auc 计算AUC值  def continue\_computing\_dynamic\_auc 动态AUC  def streaming\_dynamic\_auc(labels,  def inverse\_logit\_transformation(x):  def auc\_with\_confidence\_intervals 带有置信区间的auc值  def precision\_recall\_at\_equal\_thresholds 同一个阈值下的精确率和召回率  def streaming\_specificity\_at\_sensitivity  def streaming\_sensitivity\_at\_specificity  def streaming\_precision\_at\_thresholds 阈值 精确率  def streaming\_recall\_at\_thresholds 阈值 召回率  def streaming\_false\_positive\_rate\_at\_thresholds 阈值fpr  ef streaming\_false\_negative\_rate\_at\_thresholds 阈值fnr  def streaming\_recall\_at\_k k个召回率  def streaming\_sparse\_recall\_at\_k  def streaming\_sparse\_precision\_at\_k  def streaming\_sparse\_precision\_at\_top\_k top k 精确率  def sparse\_recall\_at\_top\_k(labels,  def \_compute\_recall\_at\_precision(tp, fp, fn, precision, name,  def recall\_at\_precision(labels,  def precision\_at\_recall(labels,  def compute\_precision\_at\_recall(tp, fp, fn, name):  def streaming\_sparse\_average\_precision\_at\_k(predictions,  def streaming\_sparse\_average\_precision\_at\_top\_k top k的均值精确率  def streaming\_mean\_absolute\_error MAE值  def streaming\_mean\_relative\_error MRE值  def streaming\_mean\_squared\_error  def streaming\_root\_mean\_squared\_error RMSE值  def streaming\_covariance(predictions,  def streaming\_pearson\_correlation(predictions,  def streaming\_mean\_cosine\_distance(predictions,  def streaming\_percentage\_less(values,  def streaming\_mean\_iou miou值  def \_next\_array\_size(required\_size, growth\_factor=1.5):  def streaming\_concat(values,  def aggregate\_metrics(\*value\_update\_tuples):  def aggregate\_metric\_map(names\_to\_tuples):  def \_calculate\_k(po, pe\_row, pe\_col, name): |

# 三 相似api细节区别

## tf.norm和tf.nn.l2\_normalize

1. Tf.norm是求矩阵T的范数: ||T||
2. Tf.nn.l2\_normalize是求矩阵T的归一化: T/||T||

## Tf.maltiply 和 tf.matmul

1. Tf.maltiply是矩阵A和矩阵B对应位置元素点乘
2. Tf.matmul是矩阵A和矩阵B的乘.(矩阵乘法)