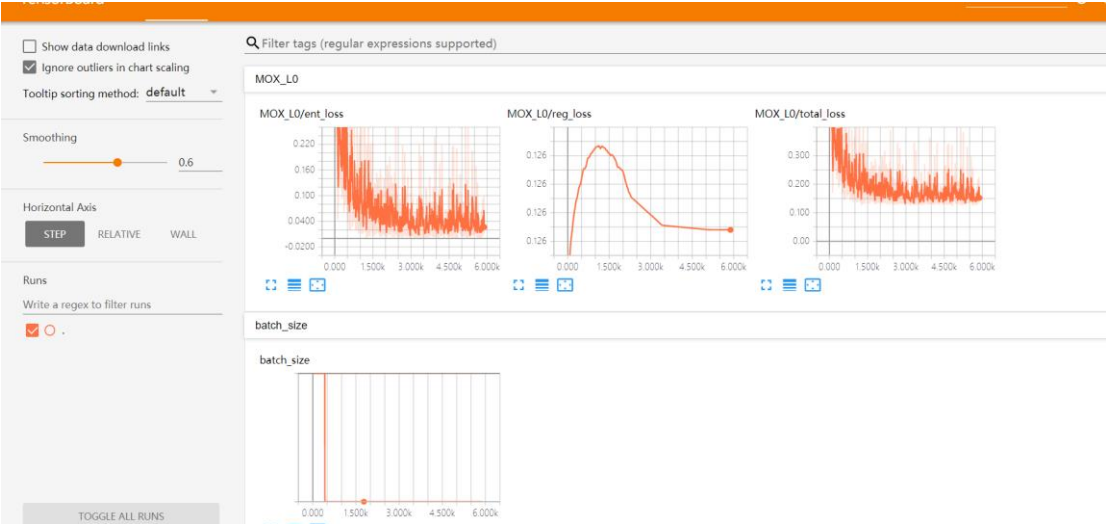


计算机科学与技术学院神经网络与深度学习课程实验报告

实验题目：华为云基本使用方法		学号：201900150221
日期：2021. 9. 22	班级：19 智能	姓名：张进华
Email：zjh15117117428@163. com		
实验目的：熟悉华为云的使用		
实验软件和硬件环境： 华为云平台 Intel(R) Core(TM) i7-9750H CPU @ 2.60GHz 2.59 GHz		
实验原理和方法： 按照实验指导书操作		
实验步骤：（不要求罗列完整源代码） 步骤一 获取密钥并创建桶。 步骤二创建桶和文件夹 步骤三 导入数据进行训练 步骤四 训练结果可视化		
		

将模型导入并部署上线

trainjob-2e68	运行成功	1	00:16:15	2021/09/21 19:43:04 GMT+08:00	--	hid_9482hrw6cu_mx3j	停止 删除
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上线后可以进行测试



[调用指南](#) | [预测](#) | [配置更新记录](#) | [难例筛选](#) Hot | [监控信息](#) | [事件](#) | [日志](#)

请求路径: 选择预测图片文件

预测图片预览



预测结果显示

 预测成功

```
1  predict_image - sunflowers -
2  {
3    "scores": [
4      [
5        "sunflowers",
6        "1.000"
7      ],
8      [
9        "tulips",
10       "0.000"
11      ],
12      [
13        "roses",
14        "0.000"
15      ],
16      [
17        "dandelion",
18        "0.000"
19      ],
20      [
21        "daisy",
22        "0.000"
23      ]
24    ]
25  }
```

训练结果符合预期

步骤五 使用 Notebook 创建模型

在 ModelArts 管理控制台，进入“开发 环境>Notebook”页面，单击左上角的“创建”。

构建完成

notebook-4461	运行中 (59 分钟后停止)	Multi-Engine 1...	CPU: 2 核 8GB	2021/09/22 17:30:5...	hid_9482hrw6cu_...	打开 打开JupyterLab 停止 删除
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训练完成

```
if __name__ == '__main__':  
    try:  
        tf.app.run(main=main)  
    except SystemExit:  
        pass
```

```
INFO:tensorflow:step: 870(global step: 870) sample/sec: 44178.471 loss: 0.782 accuracy: 0.820  
INFO:tensorflow:step: 880(global step: 880) sample/sec: 49402.874 loss: 0.704 accuracy: 0.840  
INFO:tensorflow:step: 890(global step: 890) sample/sec: 47468.357 loss: 0.471 accuracy: 0.960  
INFO:tensorflow:global_step/sec: 714.764  
INFO:tensorflow:step: 900(global step: 900) sample/sec: 18717.886 loss: 0.625 accuracy: 0.840  
INFO:tensorflow:step: 910(global step: 910) sample/sec: 47169.411 loss: 0.544 accuracy: 0.840  
INFO:tensorflow:step: 920(global step: 920) sample/sec: 45929.742 loss: 0.635 accuracy: 0.860  
INFO:tensorflow:step: 930(global step: 930) sample/sec: 52129.058 loss: 0.622 accuracy: 0.820  
INFO:tensorflow:step: 940(global step: 940) sample/sec: 54443.198 loss: 0.665 accuracy: 0.900  
INFO:tensorflow:step: 950(global step: 950) sample/sec: 49613.248 loss: 0.506 accuracy: 0.880  
INFO:tensorflow:step: 960(global step: 960) sample/sec: 31366.318 loss: 0.613 accuracy: 0.880  
INFO:tensorflow:step: 970(global step: 970) sample/sec: 48388.371 loss: 0.597 accuracy: 0.840  
INFO:tensorflow:step: 980(global step: 980) sample/sec: 49171.208 loss: 0.603 accuracy: 0.900  
INFO:tensorflow:step: 990(global step: 990) sample/sec: 53173.225 loss: 0.568 accuracy: 0.860  
INFO:tensorflow:Saving checkpoints for 1000 into ./cache/log/model.ckpt.  
INFO:tensorflow:Ignoring --checkpoint_path because a checkpoint already exists in ./cache/log/  
INFO:tensorflow:No assets to save.  
INFO:tensorflow:No assets to write.  
INFO:tensorflow:Restoring parameters from ./cache/log/model.ckpt-1000  
INFO:tensorflow:SavedModel written to: b'./cache/log/model/saved_model.pb'
```

预测结果：

```
def model_fn(inputs, run_mode, **kwargs):  
    x = inputs  
    W1 = tf.get_variable(name='W', initializer=tf.zeros([784, 10]))  
    b1 = tf.get_variable(name='b', initializer=tf.zeros([10]))  
    y = tf.matmul(x, W1) + b1  
    predictions = tf.argmax(y, 1)  
    return mox.ModelSpec(output_info={'predict': predictions})  
  
def output_fn(outputs):  
    for output in outputs:  
        result = output['predict']  
        print("The result: ", result)  
  
mox.run(input_fn=input_fn,  
        model_fn=model_fn,  
        output_fn=output_fn,  
        run_mode=mox.ModeKeys.PREDICT,  
        batch_size=1,  
        auto_batch=False,  
        max_number_of_steps=1,  
        output_every_n_steps=1,  
        checkpoint_path=checkpoint_url)  
if __name__ == '__main__':  
    try:  
        tf.app.run(main=predict)  
    except SystemExit:  
        pass  
  
INFO:tensorflow:Graph was finalized.  
INFO:tensorflow:Restoring parameters from ./cache/log/model.ckpt-1000  
INFO:tensorflow:Running local_init_op.  
INFO:tensorflow:Done running local_init_op.  
INFO:tensorflow: [1 examples]  
  
The result:  [2]
```

通过预测，我们能够看到结果输出。

发现能够正确预测，输出结果：2，预测正确

结论分析与体会：

华为云 modelarts 平台功能强大，操作有些复杂，通过两个实例教程，跟着 ppt 指导书进行了手写数字识别的案例，熟悉了华为 modelarts 平台的使用和模型训练的方法。

就实验过程中遇到和出现的问题，你是如何解决和处理的，自拟 1—3 道问答题：

1. 平台界面常用的标签寻找起来不太方便
2. 新旧版之间界限不清楚，有些功能找不到
3. 实验指导书需要及时更新