

使用 TensorFlow 进行物体识别

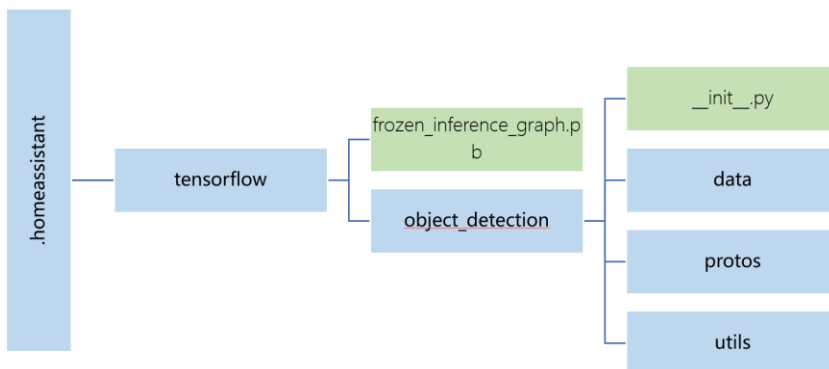
【操作步骤】

1. 使用 pip 安装 TensorFlow
2. 下载 TensorFlow/Models 项目之物体识别 data/protos/utils 三目录
3. 安装 protoc, 编译 protos 目录内容
4. 下载 TensorFlow/Models 项目之物体识别训练好的模型文件
5. 配置 TensorFlow 图像处理, 识别汽车

【参考】

- TensorFlow 网站
<https://www.tensorflow.org/?hl=zh-cn>
- HA 中 TensorFlow 图像处理配置说明
https://www.home-assistant.io/components/image_processing.tensorflow/
- TensorFlow/Models 项目之物体识别
https://github.com/tensorflow/models/tree/master/research/object_detection
 - 我们需要其中 data/protos/utils 三目录内容
 - 下载 github 项目子目录的工具页面 <https://minhaskamal.github.io/DownGit/#/home>
- protobuf 项目
<https://github.com/protocolbuffers/protobuf/>
- Windows 下运行命令

```
for /f %G in ('dir /b object_detection\protos\*.proto') do bin\protoc object_detection\protos\%G --python_out=.
```
- TensorFlow/Models 项目之物体识别已训练好的模型
https://github.com/tensorflow/models/blob/master/research/object_detection/g3doc/detection_model_zoo.md
选择其中 faster_rcnn_inception_v2_coco 模型
- HA 配置目录下, tensorflow 相关文件结构



- 相关配置样例

```
# example
camera:
  - platform: rpi_camera
    name: road
  - platform: local_file
    name: cars_on_road
    file_path: /home/pi/Pictures/cars_on_road.jpg
```

image_processing:

- platform: tensorflow

 - scan_interval: 1000000

 - confidence: 30

 - source:

 - entity_id: camera.road

 - name: car_detect

 - file_out:

 - "/home/pi/Pictures/cars_on_road.jpg"

 - model:

 - graph: /home/pi/.homeassistant/tensorflow/frozen_inference_graph.pb

 - categories:

 - person

 - car

 - trunk

script:

- car_detection:

 - alias: tensorflow 识别汽车

 - sequence:

 - service: image_processing.scan

 - data:

 - entity_id: image_processing.car_detect