README

项目整体流程及代码开发

巡检部分逻辑梳理

1、将视频每帧送入巡检人员检测模型和巡检人员+门检测模型中
2、将巡检人员bbox截取下来作为人脸检测模型的输入
3、将三个模型预测的框画在原图上（可有可无）
4、记录巡检人员第一次被识别到的和最后一次被识别到的，计算巡检人员的巡检时长，作为巡检条件1
5、找到识别到人脸五官的次数和对应时间，作为巡检条件2
6、找到识别到巡检人员接触ATM机门的次数和对应时间，作为巡检条件3

xznsh_paddle_scrfd 项目文件夹下：

- data # 原数据
- weights # 所有模型
- result # 结果输出
- d_face.py # 人脸检测
- d_people.py # 巡检人员检测 + 拉门检测
- xznsh_main.py # main

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python xznsh_main.py
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结果展示

- 巡检人员的巡检时长为：
- 巡检人员在巡检过程中出现了n次环视动作，分别在a,b,c....帧
- 巡检人员在巡检过程中出现了n次检查ATM机的动作，分别在a,b,c.....帧

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这个视频中巡检人员实际停留的时间为：10.87秒
视频中出现过10次巡检员环视的动作,分别位于视频第47.97, 56.67, 56.7, 56.73, 56.8, 56.93, 56.97, 57.0, 57.07, 57.1秒
视频中出现过213次巡检员巡检ATM机的动作,分别位于视频第47.7, 47.73, 47.77, 47.8, 47.83, 47.87, 47.9, 47.93, 47.97, 48.0, 48.03, 48.07, 48.1, 48.13, 48.17, 48.2, 48.23, 48.27, 48.3, 48.33, 48.37, 48.4, 48.43, 48.47, 48.5, 48.53, 48.57, 48.6, 48.63, 48.67, 48.7, 48.73, 48.77, 48.8, 48.83, 48.87, 48.9, 48.93, 48.97, 49.0, 49.03, 49.07, 49.1, 49.13, 49.17, 49.2, 49.23, 49.27, 49.3, 49.33, 49.37, 49.4, 49.43, 49.47, 49.5, 49.53, 49.57, 49.6, 49.63, 49.67, 49.7, 49.73, 49.77, 49.8, 49.83, 49.87, 49.9, 49.93, 49.97, 50.0, 50.03, 50.07, 50.1, 50.13, 50.17, 50.2, 50.23, 50.27, 50.3, 50.33, 50.37, 50.4, 50.43, 50.47, 50.5, 50.53, 50.57, 50.6, 50.63, 50.67, 50.7, 50.73, 50.77, 50.8, 50.83, 50.87, 50.9, 50.93, 50.97, 51.0, 51.03, 51.07, 51.1, 51.13, 51.17, 51.2, 51.23, 51.27, 51.3, 51.33, 51.37, 51.4, 51.43, 51.47, 51.5, 51.53, 51.57, 51.6, 51.63, 51.67, 51.7, 51.73, 51.77, 51.8, 51.83, 51.87, 51.9, 51.93, 51.97, 52.0, 52.03, 52.07, 52.1, 52.13, 52.17, 52.2, 52.23, 52.27, 52.3, 52.33, 52.37, 52.4, 52.43, 52.47, 52.5, 52.53, 52.57, 52.6, 52.63, 52.67, 52.7, 52.73, 52.77, 52.8, 52.83, 52.87, 52.9, 52.93, 52.97, 53.0, 53.03, 53.07, 53.1, 53.13, 53.17, 53.2, 53.23, 53.27, 53.3, 53.33, 53.37, 53.4, 53.43, 53.47, 53.5, 53.53, 53.57, 53.6, 53.63, 53.67, 53.7, 53.73, 53.77, 53.8, 53.83, 53.87, 53.9, 53.93, 53.97, 54.0, 54.03, 54.07, 54.1, 54.13, 54.17, 54.2, 54.23, 54.27, 54.3, 54.33, 54.37, 54.4, 54.43, 54.47, 54.5, 54.53, 54.57, 54.6, 54.63, 54.67, 54.7, 54.73, 54.77秒
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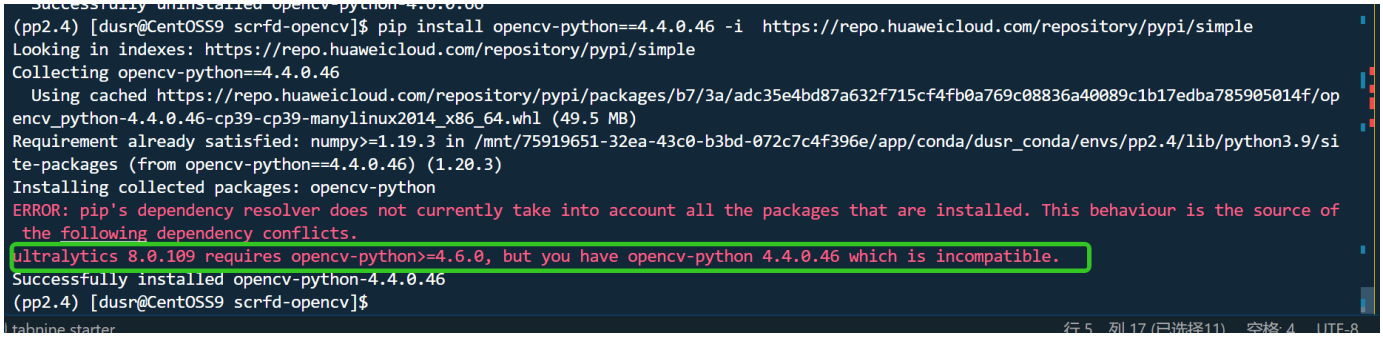
遇到的问题：

需要安装 opencv-python = 4.4.0.46
在安装ultralytics包时会把opencv版本升级到4.7，但是人脸检测的模型需要 opencv版本在 4.4.0.46


(pp2.4) [dusr@CentOSS9 scrfd-opencv]$ pip install opencv-python==4.4.0.46 -i https://repo.huaweicloud.com/repository/pypi/simple
Looking in indexes: https://repo.huaweicloud.com/repository/pypi/simple
Collecting opencv-python==4.4.0.46
  Using cached https://repo.huaweicloud.com/repository/pypi/packages/b7/3a/adc35e4bd87a632f715cf4fb0a769c08836a40089c1b17edba785905014f/opencv_python-4.4.0.46-cp39-cp39-manylinux2014_x86_64.whl (49.5 MB)
Requirement already satisfied: numpy>=1.19.3 in /mnt/75919651-32ea-43c0-b3bd-072c7c4f396e/app/conda/dusr_conda/envs/pp2.4/lib/python3.9/site-packages (from opencv-python==4.4.0.46) (1.20.3)
Installing collected packages: opencv-python
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
ultralytics 8.0.109 requires opencv-python>=4.6.0, but you have opencv-python 4.4.0.46 which is incompatible.
Successfully installed opencv-python-4.4.0.46
(pp2.4) [dusr@CentOSS9 scrfd-opencv]$