ITS简易测试环境搭建及测试方法说明

CSD IQ AE SH

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展锐声明

文档说明

- 鉴于现在较多客户未购买ITS测试设备，本文档给予简易搭建ITS测试环境的方法

- 解压获取到的android-cts-verifier-8.1_r9-linux_x86-arm.zip测试包， 安装CtsVerifier.apk包到手机，操作步骤如图：

```
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp$ cd android-cts-verifier/
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp/android-cts-verifier$ ls
CameraITS              CtsEmptyDeviceOwner.apk  CtsVerifier.apk           CtsVpnFirewallAppApi23.apk  CtsVpnFirewallAppNotAlwaysOn.apk
CtsEmptyDeviceAdmin.apk  CtsPermissionApp.apk     CtsVerifierUSBCompanion.apk  CtsVpnFirewallAppApi24.apk  NotificationBot.apk
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp/android-cts-verifier$ sudo adb devices
List of devices attached
SC98631A10189221167     device

SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp/android-cts-verifier$ adb root
adbd is already running as root
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp/android-cts-verifier$ adb remount
remount succeeded
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp/android-cts-verifier$ adb install -r -g CtsVerifier.apk
3851 KB/s (16145560 bytes in 4.093s)
Success
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/wzhx_tmp/android-cts-verifier$
```

- 下载Anaconda-1.8.0-Linux-x86_86.sh

-下载路径: https://repo.continuum.io/archive/index.html

Anaconda-1.8.0-Linux-x86.sh	393.0M	2013-11-04 15:37:29	5028bf0aa7ff8a071d5532b8f8ec924c
Anaconda-1.8.0-Linux-x86_64.sh	465.7M	2013-11-04 15:37:12	398d4b7ddc5c0a16c556c415b2444266
Anaconda-1.8.0-MacOSX-x86_64.pkg	263.0M	2013-11-04 13:57:20	2b909458ddc208807efa3516c9ecab2f
Anaconda-1.8.0-MacOSX-x86_64.sh	228.8M	2013-11-04 13:10:16	9fd7dd485c5f04fb65699a290e69671c
Anaconda-1.8.0-Windows-x86.exe	290.0M	2013-11-04 13:54:14	3b3bbc639556499d62342f653443553a
Anaconda-1.8.0-Windows-x86_64.exe	342.1M	2013-11-04 13:55:59	dccc94b5e1b77e56385a318c5c91b6d1

- 机器版本:

```
frate.zhuang@shand16:~$ uname -a
Linux shand16 3.19.0-25-generic #26~14.04.1-Ubuntu SMP Fri Jul 24 21:16:20 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
frate.zhuang@shand16:~$ python --version
Python 2.7.6
```

- **注：Anaconda版本要根据Pc和Python的对应起来，其中1.8.0对应python为2.7.x，Ubuntu 14.x，并根据机器选择32/64bit, Linux/Windows版本等。**
- **如果Ubuntu版本非14.x以及Python版本非2.7.x，则需要安装对应的Anaconda版本**

环境搭建：安装Anaconda

- Step 1 : 执行bash命令

```
Anaconda-1.8.0-Linux-x86_64.sh
frate.zhuang@shand10:~$ bash Anaconda-1.8.0-Linux-x86_64.sh

Welcome to Anaconda 1.8.0 (by Continuum Analytics, Inc.)

In order to continue the installation process, please review the license
agreement.
Please, press ENTER to continue
>>>
```

- Step 2：approve the the license

```
No Implied Warranty or Fitness for Any Use
==========================================
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CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE

Do you approve the license terms? [yes|no]
[no] >>> yes
```

环境搭建：安装Anaconda

- Step 3 : press `ENTER` to confirm the location

```
Do you approve the license terms? [yes|no]
[no] >>> yes

Anaconda will now be installed into this location:
/home11/frate.zhuang/anaconda

  - Press ENTER to confirm the location
  - Press CTRL-C to abort the installation
  - Or specify an different location below

[/home11/frate.zhuang/anaconda] >>>
```

- Step 2 : `yes` for config .bashrc

```
installing: _cache-0.0-x0 ...
Python 2.7.5 :: Continuum Analytics, Inc.
creating default environment...
installation finished.
Do you wish the installer to prepend the Anaconda install location
to PATH in your /home11/frate.zhuang/.bashrc ? [yes|no]
[no] >>> yes
```

环境搭建：安装Anaconda

- 安装完成后打开新终端， 查看是否安装正确

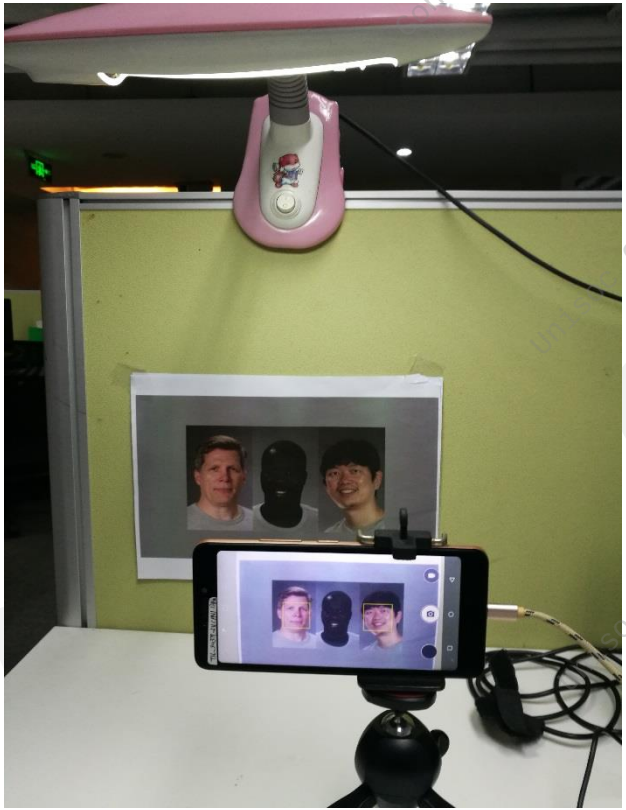
```
SPREADTRUM\frate.zhuang@sh09100pcu:~$
SPREADTRUM\frate.zhuang@sh09100pcu:~$ python --version
Python 2.7.5 :: Anaconda 1.8.0 (64-bit)
SPREADTRUM\frate.zhuang@sh09100pcu:~$
```

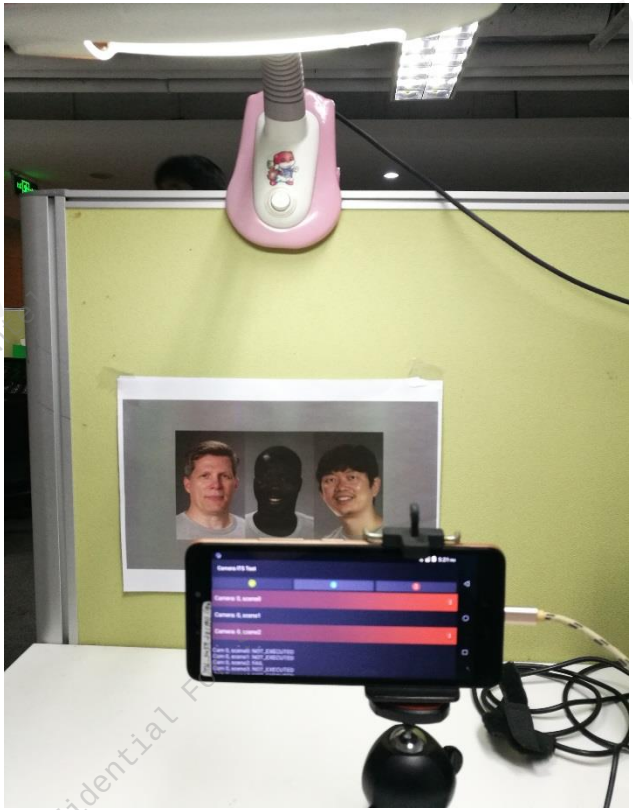
网上参考链接：https://blog.csdn.net/xiaerwoailuo/article/details/70054429

场景搭建: 注意事项

- 测试前，请把各场景需要测试用的照片打印好，A4纸即可。人脸最好是彩图。
- 照片夹在或贴在平整的板上， 用LED灯打亮，不要贴在暗环境下测试。
- 照片与相机保持垂直，不要有偏角或仰角，且距离合适。保持预览的图像亮度和清晰度合适， 且取景框中只有或大部分是照片， 不要有其他复杂的背景。
- 场景5， 需要按文档用白纸遮住镜头，周边用黑胶布密封防止有漏光。然后用LED灯直射镜头测试。
- 手机要用三脚架支撑。

场景搭建: 示例





测试操作

- 配置环境变量

```
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/android-cts-verifier/CameraITS$ source build/envsetup.sh
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/android-cts-verifier/CameraITS$
```

- 测试命令

python tools/run_all_tests.py camera=0 scenes=sensor_fusion tmp_dir=~/Work/Test_Tools/ITS/log

其中: camera=0，1 //前后摄；scenes=0，1，2，3，4，5，sensor_fusion；

tmp_dir=xx //为测试log存储路径

注: scenes 0, 5, sensor_fusion不需要图片； scenes1~4需要图片， 图片路径：android-cts-verifier/CameraITS/tests/scenexx/scenexx.pdf(大小图都可以， 需要打印出来)。

同时goole会有一个自带的pdf测试文档，路径：CameraITS/CameraITS.pdf。

网上链接资料: https://www.jianshu.com/p/aec31c99cba8

测试操作: scene0

- 测试命令：python tools/run_all_tests.py camera=0 scenes=0 tmp_dir=~/Work/Test_Tools/ITS/log
- 测试条件：均匀的灯光环境下
- 测试状态： pass 、skip、fail
- 测试结果:

测试操作: scene0

```
SPREADTRUM\frate.zhuang@sh09100pcu:~/Work/Test_Tools/ITS/log/tmp4pTcyd/0/scene0$ ll
total 1156
drwxr-xr-x 2 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users    4096 Nov  7 18:51 ./
drwxr-xr-x 3 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users    4096 Nov  7 18:48 ../
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      12 Nov  7 18:51 summary.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users 1018873 Nov  7 18:50 test_burst_capture.jpg
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:48 test_burst_capture_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      40 Nov  7 18:50 test_burst_capture_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:50 test_camera_properties_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users   56895 Nov  7 18:50 test_camera_properties_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:50 test_capture_result_dump_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      13 Nov  7 18:50 test_capture_result_dump_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users   58293 Nov  7 18:50 test_gyro_bias_plot.png
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:50 test_gyro_bias_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      23 Nov  7 18:50 test_gyro_bias_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:50 test_jitter_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      13 Nov  7 18:50 test_jitter_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:50 test_metadata_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users     942 Nov  7 18:51 test_metadata_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:51 test_param_sensitivity_burst_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      13 Nov  7 18:51 test_param_sensitivity_burst_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:51 test_sensor_events_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users      41 Nov  7 18:51 test_sensor_events_stdout.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users       0 Nov  7 18:51 test_unified_timestamps_stderr.txt
-rw-r--r-- 1 SPREADTRUM\frate.zhuang SPREADTRUM\domain^users     328 Nov  7 18:51 test_unified_timestamps_stdout.txt
```

- Jpg是测试时抓的图; pnp是统计图; xx_stderr.txt是各测试项的fail存储文件，当大小不为零时，说明测试项有fail，需要进行具体条分析; xx_stdout.txt是测试项测试时的输出打印信息，具有参考价值。

测试操作: scene1

- 测试方法：

1. 连接手机，打开camera，预览80%~90%覆盖灰卡， 打开verifier测试软件，选择Camera ITS Test这一项。

2. pc执行如下命令：python tools/run_all_tests.py camera=0 scenes=1 tmp_dir=~/Work/Test_Tools/ITS/log进行测试

- 测试条件：均匀的灯光环境下， 使用灰卡和白色背景的场景

测试操作: scene1

- 测试状态： pass 、skip、fail
- 测试结果:

  同scene0, skip.

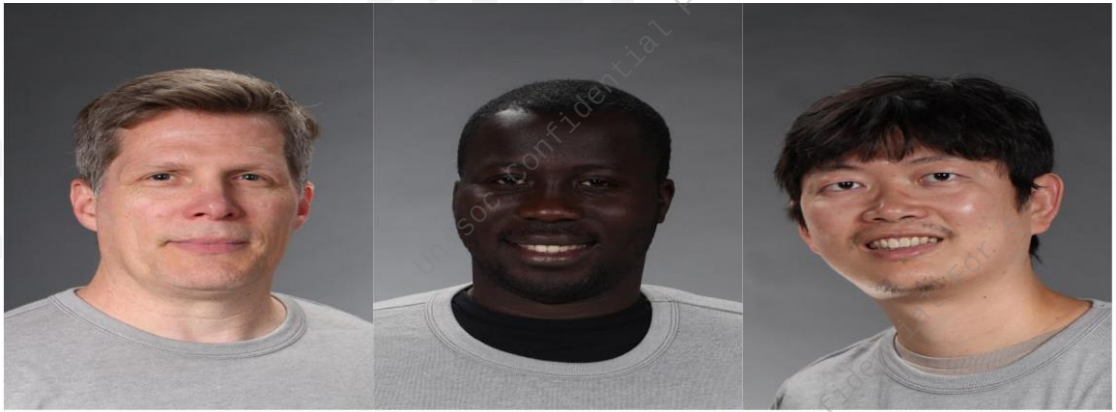
测试操作: scene2

- 测试方法：

1. 连接手机，打开camera，预览80%~90%覆盖人脸， 打开verifier测试软件，选择Camera ITS Test这一项。

2. pc执行如下命令：python tools/run_all_tests.py camera=0 scenes=2 tmp_dir=~/Work/Test_Tools/ITS/log进行测试

- 测试条件：均匀的灯光环境下， 测试人脸检测的场景



测试操作: scene2

- 测试状态： pass 、skip、fail
- 测试结果:
  同scene0, skip

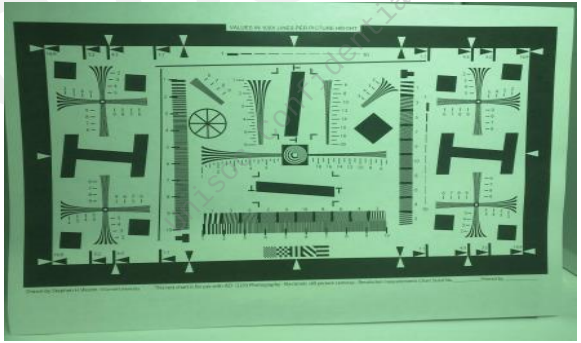
测试操作: scene3

- 测试方法：

1. 连接手机，打开camera，预览80%~90%覆盖边缘图片， 打开verifier测试软件，选择
Camera ITS Test这一项。

2. pc执行如下命令：python tools/run_all_tests.py camera=0 scenes=3 tmp_dir=~/Work/Test_Tools/ITS/log进行测试

- 测试条件：均匀的灯光环境下， 测试图像清晰度的场景



测试操作: scene3

- 测试状态： pass 、skip、fail
- 测试结果:
  同scene0, skip

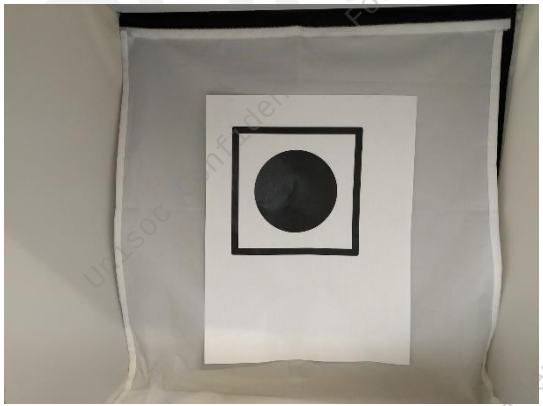
测试操作: scene4

- 测试方法：

1. 连接手机，打开camera，预览80%~90%覆盖图片， 打开verifier测试软件，选择Camera ITS Test这一项。

2. pc执行如下命令：python tools/run_all_tests.py camera=0 scenes=4 tmp_dir=~/Work/Test_Tools/ITS/log进行测试

- 测试条件：均匀的灯光环境下， 测试纵横比场景



测试操作: scene4

- 测试状态： pass 、skip、fail
- 测试结果:
  同scene0, skip

测试操作: scene5

- 测试方法：

1. 连接手机，打开camera，预览80%~90%覆盖图片， 打开verifier测试软件，选择Camera ITS Test这一项。

2. pc执行如下命令：python tools/run_all_tests.py camera=0 scenes=5 tmp_dir=~/Work/Test_Tools/ITS/log进行测试

- 测试条件：均匀的灯光环境下， 测试镜头着色和颜色均匀性场景

可以用一张白色的餐巾纸代替扩散器，将镜头对着光源， 用餐巾纸挡住镜头即可

测试操作: scene5

- 测试状态： pass 、skip、fail
- 测试结果:
  同scene0, skip

测试操作: sensor fusion

- 测试命令：python tools/run_all_tests.py camera=0 scenes=sensor_fusion tmp_dir=~/Work/Test_Tools/ITS/log
- 测试条件：均匀的灯光环境下
- 测试状态： pass 、skip、fail
- 测试结果: 同scene0, skip

THANK YOU!

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