**Opencv Face Detection**  Edit by Legend 2013/10/29

1. Use opencv2.4.2

compile

[compileOpenCV2\_4\_2.sh]

#!/bin/sh

export LD\_LIBRARY\_PATH=/usr/local/lib

echo `pkg-config --cflags opencv`

echo `pkg-config --libs opencv`

g++ `pkg-config --cflags opencv` -g -o $2 $1 `pkg-config --libs opencv`

1. Use opencv sample code “facedetect.cpp”

In “/home/legen13\_04/Desktop/OpenCV2\_4\_2 /OpenCV/OpenCV-2.4.2/samples/c”

3. In sample code, it draws a circle (construct by radius and center) on face.

4. Draw a rectangle that construct by point1 and point2. And then use the location of point to overwrite the frame.

Hint: [Use two for loop]

[Notice that the different parameters used of loaded image and current frame.]

[B[0]G[1]R[2]>>>One pixel has three elements.]

5. Remember to release the memory.

6. Be careful of the data type.

7. Read the API's structure.

GUI:

1. OpenCV – highgui

Less support (no button)

1. Qt

Need to compile on Embedded

qmake –> Makefile

make –> executable

[版本] Qt 4.7.3      (下載) [qt-everywhere-opensource-src-4.7.3.tar.gz](http://www.google.com/url?q=http%3A%2F%2Fdownload.qt-project.org%2Farchive%2Fqt%2F4.7%2Fqt-everywhere-opensource-src-4.7.3.tar.gz&sa=D&sntz=1&usg=AFrqEzeNGDdO19oj_K5LKeseRGNr96z9Yg)   (Ubuntu 13.04 可執行)

解壓縮：

tar zxvf qt-everywhere-opensource-src-4.7.3

cd qt-everywhere-opensource-src-4.7.3

安裝：

(1) ./coufigure

(2) make

(3) make install

每一個步驟都會耗費大量的時間(30分 - 2小時)

完成後就可在 /usr/local/Trolltech/ 內看到安裝的Qt

可以先用example裡面的Sample Code來試試看(內有程式碼與執行檔)

編譯：

qmake -project -> 產生對應的.pro (project檔)

qmake  -> 產生Makefile

make -> 產生可執行檔

簡單的測試程式：

#include <QApplication>

#include <QPushButton>

int main(int argc, char \*argv[])

{

QApplication app(argc, argv);

QPushButton hello("Hello Qt");

hello.show();

return app.exec();

}

Signal & Slot

讓物件之間可以傳遞訊息，但又不必知道彼此，Signal 是由物件發出，Slot 接收訊息。

在Qt中的元件，一般會預設一些Signal與Slot。

例如：

QPushButton 按鈕被按下，會發出clicked()的Signal，連接（connect）到QApplication()的quit()這個Slot，quit()會執行關閉Qt程式的動作。

#include <QApplication>

#include <QPushButton>

#include <QFont>

int main(int argc, char \*argv[]) {

QApplication app(argc, argv);

QPushButton \*btn = new QPushButton("Close");

QObject::connect(btn, SIGNAL(clicked()), &app, SLOT(quit()));

btn->show();

return app.exec();

}

另外也可以自訂自己想要的function，可參考Qt內的Sample Code。

[參考資料]

Qt embedded 環境建立 參考：

<http://dywang.csie.cyut.edu.tw/moodle23/dywang/clanguage/node107.html>

Qt學習筆記

<http://openhome.cc/Gossip/Qt4Gossip/>

Robust Real-Time Face Detection

<http://www.cmlab.csie.ntu.edu.tw/~cyy/learning/tutorials/AdaBoostApp.pdf>

逍遙文工作室:

[http://cg2010studio.wordpress.com/2011/04/26/opencv-%E4%BA%BA%E8%87%89%E5%81%B5%E6%B8%AC-face-detection/](http://cg2010studio.wordpress.com/2011/04/26/opencv-人臉偵測-face-detection/)

Trek

<http://seeyababy.blogspot.tw/2010/04/opencv-face-detection.html>

Adaboost

<http://lsyueh.pixnet.net/blog/post/7525275>

昨日

<http://yester-place.blogspot.tw/2008/07/iplimage1.html>