Embedded System Design Lab3 Document

第八組

312553040 郭晉維 312551172 陳昱凱

照片辨識：

1. 使用yolov4-opencv-cpp-python.git提供的yolo4 tiny
2. opencv使用4.4.0，在cmake-gui要另外勾起其他選項
3. 將yolov4-opencv-cpp-python.git提供的cpp code與Lab2程式碼結合
4. cross compile指令：

arm-linux-gnueabihf-g++ -g -o lab3 cpp/lab3.cpp -I /usr/local/arm-opencv4.4.0/install/include/opencv4/ -I /opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/include/ -I /usr/local/arm-opencv4.4.0/install/include/ -L /usr/local/arm-opencv4.4.0/install/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/arm-linux-gnueabihf/libc/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/qt5.5/rootfs\_imx6q\_V3\_qt5.5\_env/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/qt5.5/rootfs\_imx6q\_V3\_qt5.5\_env/qt5.5\_env/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/qt5.5/rootfs\_imx6q\_V3\_qt5.5\_env/usr/lib/ -lpthread -lopencv\_world -std=c++11 -fopenmp

即時辨識；

1. 使用YoloFastestv2.git提供的model
2. opencv使用Lab2提供的arm-opencv
3. cmake YoloFastestv2要增加toolchain，內容為

set(CMAKE\_SYSTEM\_NAME Linux)

set(CMAKE\_SYSTEM\_PROCESSOR arm)

set(CMAKE\_C\_COMPILER arm-linux-gnueabihf-gcc)

set(CMAKE\_CXX\_COMPILER arm-linux-gnueabihf-g++)

set(CMAKE\_FIND\_ROOT\_PATH\_MODE\_PROGRAM NEVER)

set(CMAKE\_FIND\_ROOT\_PATH\_MODE\_LIBRARY ONLY)

set(CMAKE\_FIND\_ROOT\_PATH\_MODE\_INCLUDE ONLY)

set(THREADS\_PTHREAD\_ARG "-pthread")

4. 將YoloFastestv2.git提供的cpp code與Lab2的程式碼結合

5. cross compile指令：

arm-linux-gnueabihf-g++ -g -o lab3\_realtime\_detect lab3\_realtime\_detect.cpp src/yolo-fastestv2.cpp -I src/include -I include/ncnn lib/libncnn.a -I /opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/include/ -I /usr/local/arm-opencv/install/include/ -L /usr/local/arm-opencv/install/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/arm-linux-gnueabihf/libc/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/qt5.5/rootfs\_imx6q\_V3\_qt5.5\_env/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/qt5.5/rootfs\_imx6q\_V3\_qt5.5\_env/qt5.5\_env/lib/ -Wl,-rpath-link=/opt/EmbedSky/gcc-linaro-5.3-2016.02-x86\_64\_arm-linux-gnueabihf/qt5.5/rootfs\_imx6q\_V3\_qt5.5\_env/usr/lib/ -lpthread -lopencv\_world -std=c++11 -fopenmp

Reference:

<https://github.com/improvess/yolov4-opencv-cpp-python>

<https://github.com/dog-qiuqiu/Yolo-FastestV2.git>

<https://github.com/opencv/opencv>