

# Vitis AI on Ubuntu 20.04 with KV260 Facedetect Demo

## 1. 安裝 Ubuntu 20.04

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## 2. 開機安裝必要庫

```
sudo apt -y update
sudo apt -y install libopencv-dev
sudo apt -y install libgoogle-glog-dev
sudo apt -y install net-tools
```

## 3. 安裝 xlnx-config snap for system management

```
sudo snap install xlnx-config --classic --channel=1.x
```

## 4. 安裝設定 Gstreamer

```
xlnx-config.sysinit
```

## 5. 安裝底層驅動 app

```
sudo xlnx-config --snap --install xlnx-nlp-smartvision
```

## 6. Load the NLP-SmartVision overlay

```
sudo xlnx-config --xmutil unloadapp
sudo xlnx-config --xmutil loadapp nlp-smartvision
```

## 7. 有 load 到 firmware 後，才能鏈結 DPU

```
sudo ln -sf /var/snap/xlnx-config/current/assets/dpu.xclbin /usr/lib/dpu.xclbin
```

## 8. 查看當前驅動 DPU 形式

```
dexplorer -w
```

## 9. 查看當前 camera 狀態

```
v4l2-ctl --list-devices
```

#### 10. 下載 facedetect model

```
wget https://www.xilinx.com/bin/public/openDownload?filename=densebox_640_360-DPUCZDX8G_ISA0_B3136_MAX_BG2-1.3.1-r241.tar.gz -O ~/densebox_640_360.tar.gz
tar -xzf ~/densebox_640_360.tar.gz -C ~
```

#### 11. clone the Vitis AI repository

```
git clone https://github.com/Xilinx/Vitis-AI.git
cd Vitis-AI
git checkout tags/v1.3.2
```

#### 12. Build Facedetect application

```
cd demo/Vitis-AI-Library/samples/facedetect/
sed -i 's/-std=c++17/-std=c++17 -I/usr/include/opencv4/g' build.sh
./build.sh
```

#### 13. link to the xmodel

```
sudo ln -s ~/densebox_640_360/densebox_640_360.xmodel ./densebox_640_360.xmodel
sudo ln -s ~/densebox_640_360/densebox_640_360.prototxt ./densebox_640_360.prototxt
```

#### 14. 測試 application

```
./test_video_facedetect ./densebox_640_360.xmodel /dev/video0
```

