Qualcomm Developer Project SmartShop1.0

Project Submission

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| **Project Title**\* | **SmartShop1.0** | |
| **Images**  *Upload up to 5 images of your project*  *Please submit/send the original JPEG/PNG files for all images included in the document* | Result(Show the dlc info by snpe-dlc-info): | |
| **Description**\*  *High level description of the project* ***(75 words or less)*** | Use the Qualcomm Neural processing SDK tool to convert the age-gender-estimation model to DLC to show the ability of model conversion and prepare DLC file for Smart Shop2.0 based C865DK | |
| **Objective**   * *What inspired you to create this project?* * *What is your desired outcome?* | Model training is performed on popular deep learning frameworks (Qualcomm Neural processing SDK supports Caffe, Caffe2, ONNX, and Tensorflow models.) After the training is completed, the trained model is converted into a DLC file, which can be loaded into the Qualcomm Neural processing SDK runtime.  Users can use Qualcomm Neural processing SDK tool to convert the trained model to DLC file, then use one of the Snapdragon accelerated computing cores to use this DLC file to perform the forward inference process. | |
| **Materials Required / Parts List / Tools** | Part Name | Link to purchase |
| Neural Processing SDK for AI | https://developer.qualcomm.com/software/qualcomm-neural-processing-sdk |
| Model | https://github.com/yu4u/age-gender-estimation/releases/tag/v0.5 |
| anaconda | https://www.anaconda.com/distribution/#download-section |
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| **Source Code / Source Examples / Application Executable**  *Link to open source / shareable code repository* | Description | Link |
| [Source Code](https://github.com/canyudeguang/Home_Automation) | [https://github.com/ThunderSoft-XA](https://github.com/ThunderSoft-XA/demo-Smart-Motion-detector)/SmartShop1.0 |
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| **Additional Resources**  *List related links or resources such as websites, videos, presentations, or other materials* | Resource Title | Link or File Name (and provide file) |
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| **Build / Assembly Instructions** | Sample outline:   1. Model Workflow.   aHR0cHM6Ly9pbWFnZXMyMDE4LmNuYmxvZ3MuY29tL2Jsb2cvNTMzOTMzLzIwMTgwOC81MzM5MzMtMjAxODA4MjkxNzAxNTg4OTctOTYxMTIzNjIxLnBuZw   1. Software Build Instructions   A)Prepare a PC (Ubuntu 16.04)  B)Prepare Qualcomm Neural processing SDK  C)Install anaconda for managing python version  D)Install the necessary libraries(Tensorlow, dlib, python-opencv, keras)   1. Perform model conversion | |
|  | Sample outline:  Conversion processing:   1. Download Neural Process SDK for AI from <https://developer.qualcomm.com/software/qualcomm-neural-processing-sdk>, and install it to PC. 2. Download age-gender-estimation model and source code 3. Download anaconda and install it . 4. Install Tensorflow, dlib, python-opencv, keras. 5. Configure the relevant environment. 6. Perform model conversion | |
| **Usage Instructions** | Sample outline:  Perform model conversion(enter age-gender-estimation project):   * 1. Just show the model effect   $python demo\_show.py --weight\_file ./pretrained\_models/weights.28-3.73.hdf5     * 1. Convert the h5(based on keras) to pb(based on tensorflow)   $python h5\_2\_frozen\_pb.py ./pretrained\_models/weights.28-3.73.hdf5   * 1. Convert pb to dlc   $snpe-tensorflow-to-dlc --input\_network weights.28-3.73.hdf5.pb --input\_dim x '1, 64, 64, 3' --out\_node Identity --out\_node Identity\_1 --output\_path age\_gender\_estimation.dlc   * 1. Check the dlc info by snpe-dlc-info   $snpe-dlc-info -i age\_gender\_estimation.dlc   * 1. Check the dlc info by snpe-dlc-viewer   $snpe-dlc-viewer -i age\_gender\_estimation.dlc   * 1. Check the DLC | |
| **Contributor(s) Info**  *Feel free to include headshots!* | Name | Title  Company |
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Filters and Tags for QDN projects page

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| **Platform/Hardware** | ☐ CSR 101x/102x Bluetooth  ☐ DragonBoard 410c  ☐ mangOH Red/Yellow | ☐ MDM920x LTE for IoT  ☐ QCA-402x WiFi/BLE/Zigbee  √     Qualcomm C865DK Dev Kit |
| **Software Tools** | ☐ 3D Audio Plugin for Unity  ☐ Adreno GPU SDK  ☐ Hexagon DSP SDK | √ Neural Processing SDK for AI  ☐ Snapdragon Profiler |
| **Operating System** | ☐ Android  ☐ Linux  ☐ ThreadX RTOS | ☐ Ubuntu Core  ☐ Windows 10 IoT Core |
| **Cloud Services/Platform** | ☐ Sierra Wireless AirVantage  ☐ Gizwits Cloud Platform  ☐ AT&T M2X  ☐ IBM Bluemix | ☐ IBM Watson IoT  ☐ Microsoft Azure IoT  ☐ Amazon AWS IoT |
| **Skill Level Required** | √ Advanced  ☐ Beginner  ☐ Intermediate |  |
| **Areas of Focus** | ☐ 3D Printing & Modeling  ☐ Alexa Voice Service  ☐ Artificial Intelligence  ☐ Bluetooth  ☐ Computer Vision  ☐ Digital Signage  ☐ Education  ☐ Embedded  ☐ Gaming | ☐ Healthcare  √ IoT  ☐ Robotics  ☐ Security  ☐ Sensors  √ Smart Cities  ☐ Smart Home  ☐ Toys |

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