Qualcomm Developer Project C865DK-Supermarket-Goods-Check1.0

Project Submission

|  |  |  |
| --- | --- | --- |
| **Attribution:** |  | |
| **Email address** | [zhangzz6687@thundersoft.com](mailto:zhangzz6687@thundersoft.com)  [yuandk0305@thundersoft.com](mailto:yuandk0305@thundersoft.com)  zhanglei0706@thundersoft.com | |
| **Project Title**\* | **C865DK-Supermarket-Goods-Check1.0** | |
| **Images**  *Upload up to 5 images of your project*  *Please submit/send the original JPEG/PNG files for all images included in the document* | C865DK.png  C865DK.png [alt tag: “C865DK-Supermarket-Goods-Check1.0 using the C865DK which is designed with Qualcomm® QCS8250 processor as development board.”] **Type-C.png**   |  | | --- | | **typc** |   [alt tag: “**using the type-c line to develop on C865DK development board.** ”]  [alt tag: “use mini-hdmi line to connect display **.**”]  IP-Camera.png  ip-camera | |
| **Description**\*  *High level description of the project* ***(75 words or less)*** | Using C865DK, the data of 1080 camera is collected by RTSP, decoded and use AI algorithm to do supermarket shelf goods checking, then the goods box and goods’ class is drawn and output to HDMI display. | |
| **Objective**   * *What inspired you to create this project?* * *What is your desired outcome?* | 1.Show the powerful decoding power of C865DK  2.Try to use tensorflow lite mode to inference and accelerate based on Android NN API | |
| **Materials Required / Parts List / Tools** | Part Name | Link to purchase |
| C865DK | https://www.thundercomm.com/app\_en/product/1590131656070623 |
| Type-c line | https://detail.tmall.com/item.htm?id=44425281296&ali\_refid=a3\_430582\_1006:1103572855:N:8BFxSxK119dzkfQCc2yGI2us815vvcUHETWnj5g1swo=:6399b40850a40201c56536531a885bcf&ali\_trackid=1\_6399b40850a40201c56536531a885bcf&spm=a230r.1.14.11 |
| IP Camera | https://item.jd.com/ |
| Models | http://storage.googleapis.com/download.tensorflow.org/models/tflite/coco\_ssd\_mobilenet\_v1\_1.0\_quant\_2018\_06\_29.zip |
|  |  |
| Description | Link |
| [Source Code](https://github.com/canyudeguang/Home_Automation) | [https://github.com/ThunderSoft-XA](https://github.com/ThunderSoft-XA/demo-Smart-Motion-detector)/C865DK-Supermarket-Goods-Check1.0 |
| **Source Code / Source Examples / Application Executable**  *Link to open source / shareable code repository* |  |  |
|  |  |
|  |  |
| Resource Title | Link or File Name (and provide file) |
|  |  |
| **Additional Resources**  *List related links or resources such as websites, videos, presentations, or other materials* |  |  |
|  |  |
|  |  |
|  |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Build / Assembly Instructions** | Sample outline:   1. Overall design framework and Test environment construction method.      1. Software Build Instructions   Prepare a PC (Ubuntu 16.04/ window10/ MAC);   1. Install app to C865DK device   adb device; adb install Supermarket-Goods-Check1.0.apk | |
|  | Sample outline:   1. How does it work?   Below are some usage instructions to test the project. Now let's introduce the Supermarket-Goods-Check1.0’s work flow .  Supermarket-Goods-Check1.0 application realizes the video and display that come from IP cameras decoding and use AI algorithm based on tensorflow lite API to do supermarket shelf goods checking, then the goods box and goods’ class is drawn and output to HDMI display .  [Directory](C:/Users/user/AppData/Local/youdao/dict/Application/8.9.5.0/resultui/html/index.html" \l "/javascript:;) [structure](C:/Users/user/AppData/Local/youdao/dict/Application/8.9.5.0/resultui/html/index.html" \l "/javascript:;) of project:  Main structure of java： ├── eBox //Main function directory│   ├── Activity //group-box control│   ├── Adapter│   ├── AI // AI task to do goods check│   ├── Config //Configuration module│   ├── Constants│   ├── Data //some AI data structure│   ├── Gl //display module│   ├── Log│   ├── Model│   ├── Utils //some common functions│   └── VIew //display interface├── gateway //some info structure│   ├── data│   └── utils├── libyuv //the color conversion├── rtsp //rtsp client module└── util //common functions Function support by cpp：  ├── Affinity //CPU binding functions  ├── BasicUsageEnvironment  │   └── include  ├── groupsock //live555 feature  │   └── include  ├── libbitmap //same bitmap functions  ├── libyuv //mage color space conversion  │   └── libyuv  │   ├── build\_overrides  │   ├── docs  │   ├── include  │   │   └── libyuv  │   ├── infra  │   │   └── config  │   ├── source  │   ├── tools\_libyuv  │   │   ├── autoroller  │   │   │   └── unittests  │   │   │   └── testdata  │   │   ├── msan  │   │   ├── ubsan  │   │   └── valgrind  │   │   └── memcheck  │   ├── unit\_test  │   │   └── testdata  │   └── util  ├── liveMedia //live555 feature  │   └── include  ├── RtspClient //live555 feature  │   └── include  └── UsageEnvironment //live555 feature  └── include | |
| **Usage Instructions** | Sample outline:   1. Install app to C865DK device   adb install Supermarket-Goods-Check1.0.apk   1. Start app.   1)connect wifi/wired network, start “edgebox client” app  ic_launcher.png  2)Click Settings and click “+” to add RTSP URL  Screenshot_20210323-101538.png   1. Back to start playing and do supermarket goods check.   Screenshot_20210913-124441  This APP can recognize 80 kinds of objects as follow:  person  bicycle  car  motorcycle  airplane  bus  train  truck  boat  traffic light  fire hydrant  stop sign  parking meter  bench  bird  cat  dog  horse  sheep  cow  elephant  bear  zebra  giraffe  backpack  umbrella  handbag  tie  suitcase  frisbee  skis  snowboard  sports ball  kite  baseball bat  baseball glove  skateboard  surfboard  tennis racket  bottle  wine glass  cup  fork  knife  spoon  bowl  banana  apple  sandwich  orange  broccoli  carrot  hot dog  pizza  donut  cake  chair  couch  potted plant  bed  dining table  toilet  tv  laptop  mouse  remote  keyboard  cell phone  microwave  oven  toaster  sink  refrigerator  book  clock  vase  scissors  teddy bear  hair drier  toothbrush | |
| **Contributor(s) Info**  *Feel free to include headshots!* | Name | Title  Company |
|  |  |
|  |  |
|  |  |

––– Continued on next page –––

Filters and Tags for QDN projects page

|  |  |  |
| --- | --- | --- |
| **Platform/Hardware** | ☐ CSR 101x/102x Bluetooth  ☐ DragonBoard 410c  ☐ mangOH Red/Yellow | ☐ MDM920x LTE for IoT  ☐ QCA-402x WiFi/BLE/Zigbee  √  Turbox™ C865 Development 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  √ Smart Retail |

*By submitting your content (“Submission”), you are granting Qualcomm a royalty-free, perpetual, non-exclusive, unrestricted, worldwide license to: (a) post, use, copy, sublicense, adapt, transmit, publicly perform or display any such Submission, (b) use, reproduce, modify, adapt, publish, translate, create derivative works from, distribute, perform, play, host, communicate, make available and publish your Submission without restriction and (c) sublicense to third parties the unrestricted right to exercise any of the foregoing rights granted with respect to the Submission. The foregoing grants shall include the right to exploit any ideas, concepts, intellectual property, or proprietary rights in such Submission, including but not limited to rights under copyright, trademark, servicemark or patent laws under any relevant jurisdiction without Qualcomm owing any monies to you whatsoever. You represent and warrant that you own all right, title and interest in and to the Submission, or you have been granted sufficient rights in and to the Submission allowing the foregoing use of such Submission.*