Qualcomm Developer Project AudioRecognition-demo

Project Submission

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| **Project Title**\* | **AudioRecognition** | |
| **Images**  *Upload up to 5 images of your project*  *Please submit/send the original JPEG/PNG files for all images included in the document* | **Qualcomm® RB1**  RB2  [Alt tag: “StyleTransfer-demo using The Qualcomm® QRB2210 SOC Open Kit”]  **Type-c usb line**   |  | | --- | | **typc** |   [Alt tag: “using the USB line to develop on Qualcomm® QRB2210 SOC Open Kit” ]  **charger**  charger  [Alt tag: “using round-hole charger to power Qualcomm® QRB2210 SOC Open Kit”] | |
| **Description**\*  *High level description of the project* ***(75 words or less)*** | This project is based on the QRB2210 development kit system source code, running on the QRB2210 development board, making full use of the diversification of the development kit and the powerful connection and computing capabilities. tensorflow lite C++ library is used to load and process YAMNet tflite model files, and libsndfile library is used to read related information of audio files. After processing, the sequence number, name and probability of the possible top ten probability labels of the audio are output. | |
| **Objective**   * *What inspired you to create this project?* * *What is your desired outcome?* | I want to get some information about the content of the audio in an environment where it can't be played. In this way, I can get more information in some complex situations to help me deal with related problems better. | |
| **Materials Required / Parts List / Tools** | Part Name | Link to purchase |
| Qualcomm® QRB2210 SOC Open Kit | https://www.thundercomm.com/zh/product/qualcomm-robotics-rb1-platform/ |
| USB Line | https://item.jd.com/40759941966.html |
| **Source Code / Source Examples / Application Executable**  *Link to open source / shareable code repository* | Description | Link |
| Source Code | https://github.com/ThunderSoft-XA/RB1-AudioRecognition |
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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** | Example overview:  (1) After configuring the RB1 SDK, create a cross-compilation environment.  (2)Configure libraries such as tensorflow lite C++, libsndfile, etc. to run YAMNet models in a cross-compiled environment.  (3)In the cross-compilation environment, the product is directly compiled and generated by Cmake | |
|  | Sample outline:   1. How does it work? 2. Prepare the Audio to be analyzed and place it in the audios directory on the same level as the audio-recognition executable. 3. Place the trained yamnet model file (must be named yamnet.tflite) and the model label file (must be named yamnet\_class\_map.csv) in the cfg directory on the same level as the Audio-recognition executable. 4. Execute the AudioRecognition executable. | |
| **Usage Instructions** | The Demo running results are as follows：  final result: | |
| **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  √ Qualcomm QRB2210 | MDM920x LTE for IoT  QCA-402x WiFi/BLE/Zigbee  Qualcomm Robotics RBx 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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