Qualcomm Developer Project MonoDepthEstimate-demo

Project Submission

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| **Project Title**\* | MonoDepthEstimate | |
| **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® CM2290**  IMG_256  [Alt tag: “MonoDepthEstimate-demo using The Qualcomm® CM2290 SOC Open Kit”]  **Type-c usb line**   |  | | --- | | **typc** |   [Alt tag: “using the USB line to develop on Qualcomm® CM2290 SOC Open Kit” ]  **charger**  charger  [Alt tag: “using round-hole charger to power Qualcomm® CM2290 SOC Open Kit”] | |
| **Description**\*  *High level description of the project* ***(75 words or less)*** | CM2290 has strong wifi connection capability, multiple camera interfaces and extraordinary computing power, so it can be used to develop a series of complex scenarios. This time, in order to see the debugging results more intuitively when deploying image processing algorithms, we try to obtain the algorithm results through wifi on the mobile terminal. | |
| **Objective**   * *What inspired you to create this project?* * *What is your desired outcome?* | The depth estimation algorithm is widely used in the field of automatic driving, but the debugging results cannot be seen intuitively when the algorithm is deployed on an interface free platform. Therefore, this project pushes the processing results of the algorithm to the mobile terminal combined with wifi to facilitate development and debugging. | |
| **Materials Required / Parts List / Tools** | Part Name | Link to purchase |
| Qualcomm® CM2290 SOC Open Kit | https://www.thundercomm.com/zh/product/cm2290-c2290-development-kit |
| USB Line | https://item.jd.com/40759941966.html |
| Charger |  |
| OVA3 camera |  |
| **Source Code / Source Examples / Application Executable**  *Link to open source / shareable code repository* | Description | Link |
| Source Code | https://github.com/ThunderSoft-XA/CM2290-MonoDepthEstimate-demo |
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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. Quickly build AP WIFI through command line tools 2. Using MediaServer tool to set up the push stream server from third party ZLMediaKit project 3. Use gstreamer to get camera video to cm2290 host port 4. Using Ffmpeg to obtain the video stream data of the host port and convert it into the format supported by RTSP, and the MediaServer stream server generates the RTSP stream. 5. The mobile connects to CM2290 AP wifi and plays RTSP streams for show depth estimation result by EasyPlayer. | |
|  | Sample outline:   1. How does it work?   Open AP WIFI through HostAPD and UDHCPD tools, use MediaServer and FFMpeg tools to build rtsp streaming media server, then run gst\_depth\_test to complete the depth estimation of camera image data, and push the result image to the local port, FFMpeg obtains the local port data and completes the format conversion Afterwards, the rtsp video stream is generated by the MediaServer streaming server. | |
| **Usage Instructions** | The Demo running results are as follows：  final result:  stereo_disp | |
| **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 CM2290 | 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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