Qualcomm Developer Project VisionTest1.0

Project Submission

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| **Project Title**\* | **VisionTest1.0** | |
| **Images**  *Upload up to 5 images of your project*  *Please submit/send the original JPEG/PNG files for all images included in the document* | Model training results: | |
| **Description**\*  *High level description of the project* ***(75 words or less)*** | Show how to train and generate a gesture classification TensorFlow JS model ,convert to the tflite model required by 845DK platform, providing AI model for VisionTest demo. | |
| **Objective**   * *What inspired you to create this project?* * *What is your desired outcome?* | TensorFlow.js is an open-source hardware-accelerated JavaScript library for training and deploying machine learning models.  Google Colab is a product from Google Research. Colab allows anybody to write and execute arbitrary python code through the browser, and is especially well suited to machine learning, data analysis and education. More technically, Colab is a hosted Jupyter notebook service that requires no setup to use, while providing free access to computing resources including GPUs.  This demo based on TensorFlow.js to use a pretrained truncated MobileNet model and train another model using the internal MobileNet activation to predict upto 4 different classes from the webcam defined by the user, then convert TensorFlow.js to TensorFlow Lite Model in Google Colab. | |
| **Materials Required / Parts List / Tools** | Part Name | Link to purchase |
| Google Colab | https://colab.research.google.com |
| TensorFlow Examples | https://github.com/tensorflow/examples/tree/master/lite/examples/gesture\_classification/web |
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| **Source Code / Source Examples / Application Executable**  *Link to open source / shareable code repository* | Description | Link |
| [Source Examples](https://github.com/canyudeguang/Home_Automation) | [https://github.com/ThunderSoft-XA](https://github.com/ThunderSoft-XA/demo-Smart-Motion-detector)/VisionTest1.0.git |
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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. Download gesture\_classification web project   URL:https://github.com/tensorflow/examples/tree/master/lite/examples/gesture\_classification/web  2. Run gesture\_classification web project  3. Train gesture\_classification TF Js Model  4. Convert TensorFlow.js to TensorFlow Lite Model at Google Colab  5. Download tflite mode from Google Colab  Please refer to <Project Dir>/doc/How-To-Get-TFlite-Model.docx for detail. | |
| **Usage Instructions** | Sample outline:  Result(tflite model layer structure):    Please check <Project Dir>/C865DK-VisionTest1.0/model.tflite.svg to check full layer structure | |
| **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 |
| **Software Tools** | ☐ 3D Audio Plugin for Unity  ☐ Adreno GPU SDK  ☐ Hexagon DSP SDK | ☐ AIMET  ☐ 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  √ Google Colab |
| **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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