EIQTRN

eIQ Toolkit 1.3.4 Release Notes

Rev. 4 — 31 March 2022 Release Notes

Contents

1 Overview

This document contains information about the content, new features, and limitations of the eIQ Toolkit package. eIQ Toolkit is a machine learning environment which enables its users to train and run machine learning models as efficiently as possible on NXP hardware.

Table 1. Component overview

Component name	Version
eIQ Portal	2.4.8
eIQ Model Tool	2.4.2
DeepView Converter	2.5.12
DeepViewRT	2.4.38
DeepView Trainer (Trainer-server)	2.4.3
DeepView Validator	2.3.12
Modelrunner	2.1.16
DeepView Importer	2.1.15
DeepView Datastore	2.1.15
Python	3.8.10
Python – Tensorflow	2.5.0
Python – ONNX	1.11.0

2 References

This release includes the following references and additional information:

- *eIQ Toolkit User's Guide* (document EIQTUG) - provides the information about the eIQ Toolkit.
- *eIQ Toolkit Release Notes* (document EIQTRN) - provides the release information.
- *DeepViewRT User's Manual* - provides the information about DeepViewRT inference engine.
- *Datastore User's Manual* - provides the information about Datastore API for dataset management.
- *Custom Models Note* - provides the information about creating custom models for image-classification and object-detection problems.

3 New features

The current release focuses mainly on bug fixing:

- Python examples were added to the *<install_dir>/deepviewrt/deepview-rt-python-examples* directory, which demonstrates how to use the "deepviewrt" inference engine to classify and detect images.
- Jupyter notebooks to measure accuracy metrics for classification and object detections were added to *<install_dir>/workspace/validator*.
- Options to display the "mAP" (and generally accuracy metrics) during training of object-detection models were added.
- The image validation for object detection was added into the DeepView Validator.
- A CIFAR10-based CNN example to demonstrate the custom model API was added to *<install_dir>/workspace/user_models*.
- A significant number of minor bugs was fixed, such as:
  - Mobilenet conversions from ONNX to TF Lite generating a huge number of nodes
  - Mobilenet v3 SSD training convergence on COCO dataset
  - Device selection during model validation
  - GUI defects and improved GUI usage
  - Other minor fixes

4 Known issues and workarounds

The following list specifies the currently known issues (which may impact the user experience) and workarounds:

- If training a detection model without test images, disable the evaluation in the "Evaluation Settings" sidebar on the "Trainer" screen.
- The validation may not work when the proxy settings are enabled.
- Issues were observed for the ONNX to TFLite conversions due to differences between the two formats and 3rd party library usage. Significant improvements were introduced since the last version. Specifically, this applies to models originating from PyTorch.
- Issues were observed for the H5/TF Lite to ONNX conversions due to differences between the two formats and 3rd party library usage.
- Issues were observed in quantized conversions using the TF SavedModel format.
- The file browser does not open documentation from the eIQ Portal/Model Tool on Ubuntu 20.04. Navigate to *<install_dir>/docs* manually.
- Conversion from TensorFlow 1.x Pb to RTM with the quantization enabled does not work using the Model Tool. However, it works using the "deepview-converter command-line" tool with the "--quantize" parameter.

5 Revision history

Table 2. Revision history

Revision number	Date	Substantive changes
0	9 June 2021	eIQ Toolkit 1.0.3
1	24 June 2021	eIQ Toolkit 1.0.5
2	19 October 2021	eIQ Toolkit 1.1.8
3	18 January 2022	eIQ Toolkit 1.2.5
4	31 March 2022	eIQ Toolkit 1.3.4

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Date of release: 31 March 2022
Document identifier: EIQTRN