Edge Impluse Lab

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Rollno:25MML0057

Task: to train the model for the Data collected from the Camera

Impulse #1

An impulse takes raw data, uses signal processing to extract features, and then uses a learning block to classify new data.

Image data

Input axes
image

Image width   **Image height**
96   96

Resize mode
Fit shortest

Image

Name
Image

Input axes (1)
Image
image

Classification

Name
Classifier

Input features
☑ Image

Output features
5 (purple_002, purple_005, purple_008, purple_013, purple_014)

Output features

5 (purple_002, purple_005, purple_008, purple_013, purple_014)

Save Impulse

Raw Data Features

Parameters   Generate features

Raw data

Show: All labels   purple_002 (purple_ ⌄

Raw features

0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0x…

Parameters

Image

Color depth ⑦   RGB

Save parameters ⌄

DSP result

Image

Processed features ⧉

0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 1,…

On-device performance ⑦

2)Before the Accuarcy Improvement

Target: Cortex-M4F 80MHz

Neural Network settings

Training settings

Setting	Value
Number of training cycles ⑦	25
Use learned optimizer ⑦	☐
Learning rate ⑦	0.0005
Training processor ⑦	CPU

Advanced training settings ▾

Neural network architecture

Neural network   Transfer learning

Input layer (27,648 features)

2D conv / pool layer (16 filters, 3 kernel size, 1 layer)

Training output   🔇 (0)   ▾

Model

Model version: ⑦   Quantized (int8) ▾

Last training performance (validation set)   📊

%	ACCURACY 0.0%		LOSS 3.24

Confusion matrix (validation set)

	PURPLE_002	PURPLE_005	PURPLE_008	PURPLE_013	PURPLE_014
PURPLE_002	-	-	-	-	-
PURPLE_005	-	-	-	-	-
PURPLE_008	-	-	-	-	-
PURPLE_013	-	-	-	-	-
PURPLE_014	0%	0%	100%	0%	0%
F1 SCORE			0.00		0.00

Metrics (validation set)   ⬇

METRIC	VALUE

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1)To Capture images of different objects in different angles, label the names, upload the images into edge impulse website, train the images on any model and predict the accuracy of the output.

2)In the project info we can choose any one of the labelling methods, if I take bounding method I have to detect the object specifically by selecting the image position.

From the Data acquisition bar collect the data from either of those options:
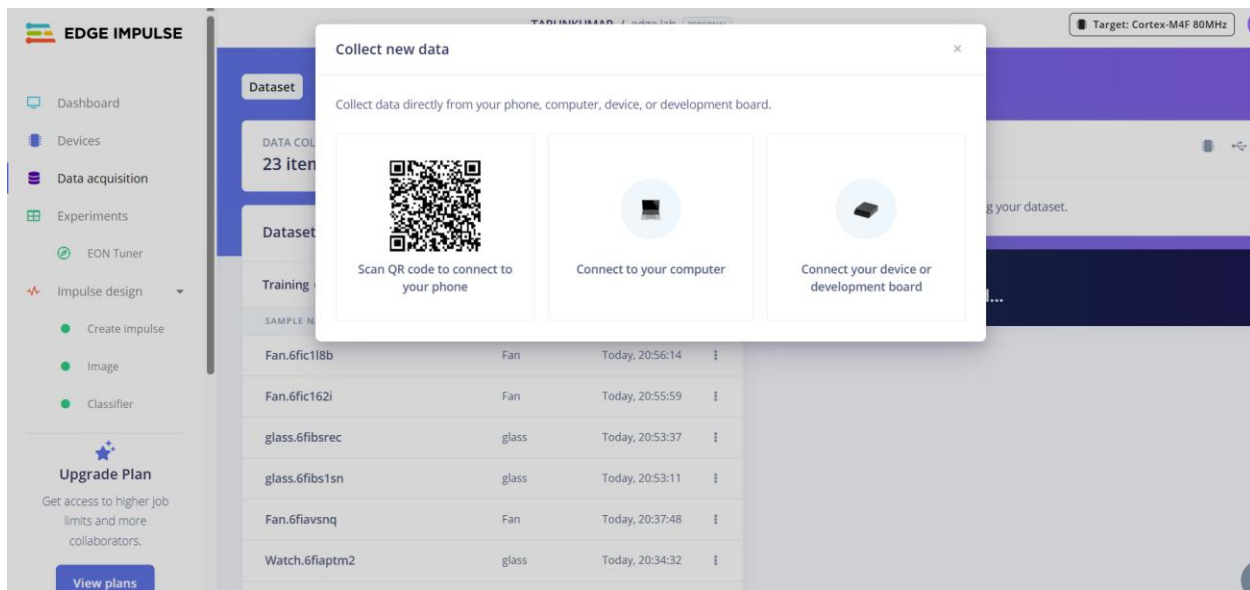
Fan Dataset Collected from the device

3)Now create the impulse by adding the processing block and learning block and save impulse

4) Now go to image tab and generate features

5) In the Neural Network choose the setting of the model from the given options and click train & save option

Results: Accuracy = 100%