

Edge Intelligence

Lab 5

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Edge Impulse :-

1. Create account in edge impulse
2. go to data acquisition .
3. Choose connect data option.
4. scan qr using phone.
5. Select Label data before clicking a photo.
6. Split the clicked photos into train and test data

Data Samples :-

The screenshot displays the Edge Impulse web interface for a project named 'rahulmarripudi / rahulmarripudi-project-1'. The interface includes a sidebar with navigation options like Dashboard, Devices, Data acquisition, Experiments, EON Tuner, Impulse design, and Versioning. The main content area shows a 'Dataset' tab with 'DATA COLLECTED 14 items' and a 'TRAIN / TEST SPLIT 71% / 29%'. A table lists the dataset samples, categorized into Training (10) and Test (4). The table columns are Sample Name, Label, and Added. A 'Collect data' section on the right prompts the user to 'Connect a device to start building your dataset.' and a 'RAW DATA' section prompts the user to 'Click on a sample to load...'. An 'Upgrade Plan' button is visible in the bottom left corner.

SAMPLE NAME	LABEL	ADDED
Mouse.6ebhg36j	Mouse	Jan 08 2026, 19:0...
Pen.6ebhek3j	Pen	Jan 08 2026, 19:0...
Pen.6ebhdt29	Pen	Jan 08 2026, 18:5...
I'd card.6ebhcpaa	I'd card	Jan 08 2026, 18:5...
I'd card.6ebhceg5	I'd card	Jan 08 2026, 18:5...
Laptop.6ebh8ft2	Laptop	Jan 08 2026, 18:5...
Laptop.6ebh805a	Laptop	Jan 08 2026, 18:5...
Mouse.6ebh6g6l	Mouse	Jan 08 2026, 18:5...
Book.6ebh4ul8	Book	Jan 08 2026, 18:5...
Book.6ebh4bqv	Book	Jan 08 2026, 18:5...

Training and Testing :-

The screenshot shows the Edge Impulse web interface with a modal dialog titled "Dataset train / test split ratio". The dialog provides information about training and testing data splits and lists labels in the dataset with their respective split ratios.

Dataset train / test split ratio

Training data is used to train your model, and testing data is used to test your model's accuracy after training. We recommend an approximate 80/20 train/test split ratio for your data for every class (or label) in your dataset, although especially large datasets may require less testing data.

SUGGESTED TRAIN / TEST SPLIT 80% / 20%

Labels in your dataset

Some classes have a poor train/test split ratio: Book, I'd card, Laptop. To fix this, add or move samples to the training or testing data.

Label	Training Data	Testing Data	Count
BOOK	100%	0%	(2 / 0)
I'D CARD	100%	0%	(2 / 0)
LAPTOP	50%	50%	(2 / 2)
MOUSE	67%	33%	(2 / 1)
PEN	67%	33%	(2 / 1)

Dismiss

Image – Generating Features :-

The screenshot shows the Edge Impulse web interface with the "Generate features" workflow. It displays the training set details, the feature generation output log, and the feature explorer visualization.

Parameters **Generate features**

Training set

Data in training set: 10 items

Classes: 5 (Book, I'd card, Laptop, Mouse, Pen)

Generate features

Feature generation output

Fetching info for data items OK

✓ Job scheduled at: 10 Jan 2026 15:09:12

✓ Job started at: 10 Jan 2026 15:09:16

Creating windows from files...

[0/0] Creating windows from files...

Created 0 windows: Book: 0, I'd card: 0, Laptop: 0, Mouse: 0, Pen: 0

Merging generated features and cache...

Job completed (success)

Feature explorer

Scatter plot showing data points for different classes: Book (blue), I'd card (orange), Laptop (green), Mouse (red), Pen (purple).

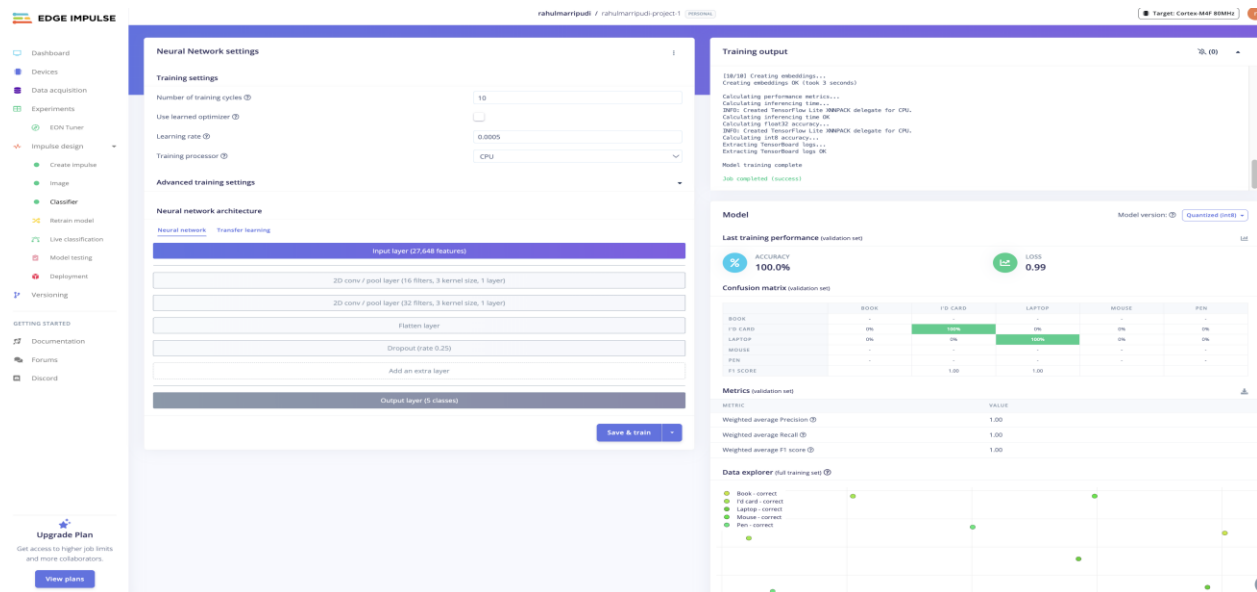
On-device performance

PROCESSING TIME: 7 ms.

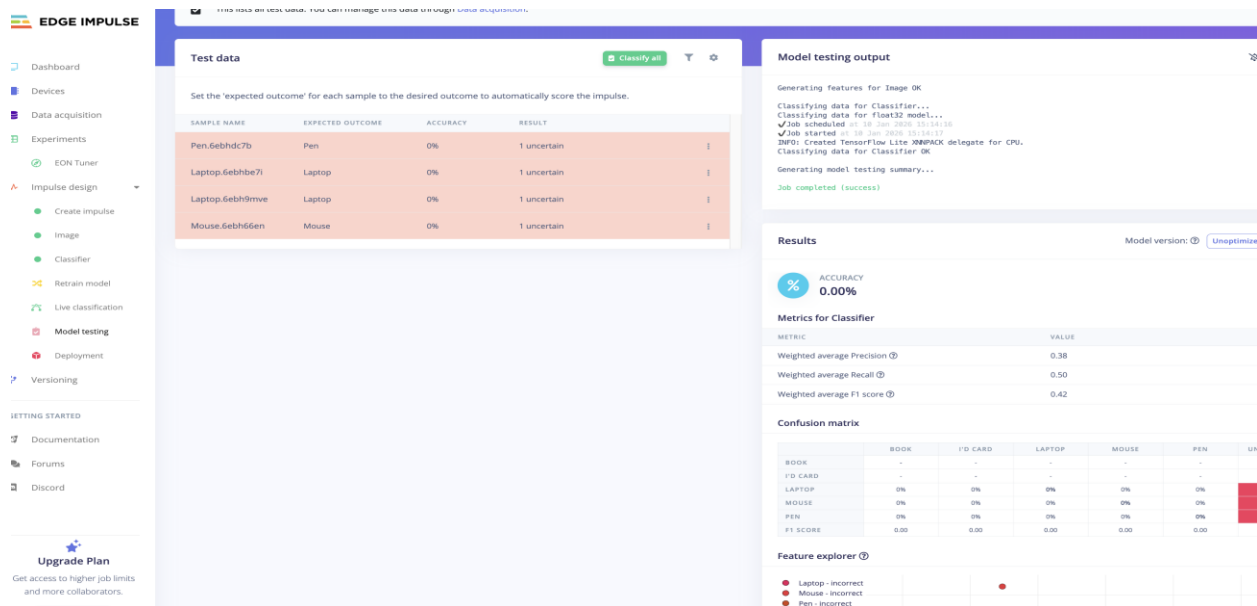
PEAK RAM USAGE: 4 KB

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Classifier - Training Output :-



Model Testing Output :-



Result: The model achieved **100% accuracy on the training data**, but **0% accuracy on the testing data**, indicating **severe overfitting**. This occurred because the dataset contains **many labels but very limited data samples**, preventing the model from generalizing well to unseen data.