

EDGE IMPULSE

Mustafa / mustfa.kahraman-project-1

#1 Click to set a description for this version Target: Cortex-M4F 80MHz

### Neural Network settings

#### Training settings

Number of training cycles ② 100

Learning rate ② 0.0005

Validation set size ② 20 %

Auto-balance dataset ② ☐

#### Neural network architecture

Input layer (33 features)

Dense layer (20 neurons)

### Training output

#### Model

Model version: ② Quantized (int8)

#### Last training performance (validation set)

ACCURACY 93.8% LOSS 0,14

#### Confusion matrix (validation set)

	IDLE	SNAKE	UPDOWN	WAVE
IDLE	100%	0%	0%	0%
SNAKE	0%	88.9%	3.0%	8.1%
UPDOWN	0%	0%	100%	0%
WAVE	0%	12.1%	0%	87.9%
F1 SCORE	1.00	0.88	0.98	0.90

#### Data explorer (full training set) ②

Did you know? You can capture data from any device or development board, or upload your existing datasets - Show options

DATA COLLECTED  
4m 4s



TRAIN / TEST SPLIT  
100% / 0%



Record new data

Connect using WebUSB

No devices connected to the remote management API.

### Collected data

Filter icons: funnel, square, person, and refresh.

SAMPLE NAME	LABEL	ADDED	LENGTH	
wave.3i7o4d0f	wave	Today, 21:05:59	5s	⋮
wave.3i7o3tje	wave	Today, 21:05:43	5s	⋮
wave.3i7o3t26	wave	Today, 21:05:42	5s	⋮
wave.3i7o333k	wave	Today, 21:05:16	5s	⋮
wave.3i7o2n5n	wave	Today, 21:05:04	5s	⋮
wave.3i7o1im7	wave	Today, 21:04:26	5s	⋮
wave.3i7o149c	wave	Today, 21:04:12	5s	⋮
wave.3i7nvoeg	wave	Today, 21:03:27	5s	⋮
wave.3i7nt9rd	wave	Today, 21:02:06	5s	⋮
wave.3i7nsdde	wave	Today, 21:01:37	5s	⋮
wave.3i7nrms0	wave	Today, 21:01:15	5s	⋮
wave.3i7npkt5	wave	Today, 21:00:06	5s	⋮

RAW DATA

Click on a sample to load...

## Raw features

-11.9945, -2.4524, -2.5462, -12.8787, -2.2733, -1.2372, -12.3877, -2.4719, -1.1814, -12.1694, -2.1915, -0.6345, -12.118

## Parameters

### Filter

Scale axes 1

Type high

Cut-off frequency 3

Order 6

### Spectral power

FFT length 128

No. of peaks 3

Peaks threshold 0.1

Power edges 0.1 0.5 1.0 2.0 5.0

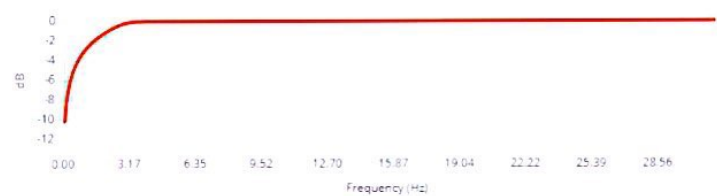
Take log of spectrum? ☒

Overlap FFT frames? ☒

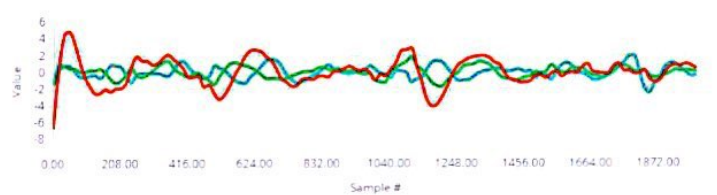
Save parameters

## DSP result

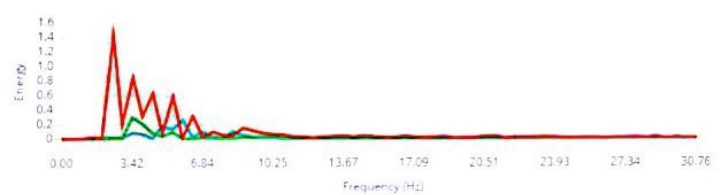
### Filter response



### After filter



### Spectral power (log)



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## Neural Network settings

## Training settings

Number of training cycles ⓘ 100

Learning rate ⓘ 0.0005

Validation set size ⓘ 20 %

Auto-balance dataset ⓘ

## Neural network architecture

Input layer (33 features)

Dense layer (20 neurons)

Dense layer (10 neurons)

Add an extra layer

Output layer (4 classes)

Start training

## Training output

## Model

Model version: ⓘ Quantized (int8)

## Last training performance (validation set)

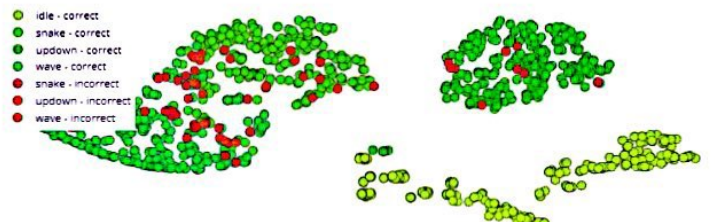
ACCURACY 93.8%

LOSS 0,14

## Confusion matrix (validation set)

	IDLE	SNAKE	UPDOWN	WAVE
IDLE	100%	0%	0%	0%
SNAKE	0%	88.9%	3.0%	8.1%
UPDOWN	0%	0%	100%	0%
WAVE	0%	12.1%	0%	87.9%
F1 SCORE	1.00	0.88	0.98	0.90

## Data explorer (full training set) ⓘ



## Anomaly detection settings

Cluster count

32

Axes

★ Select suggested axes

- ☒ accY RMS ★
- ☐ accY Peak 1 Freq
- ☐ accY Peak 1 Height
- ☐ accY Peak 2 Freq
- ☐ accY Peak 2 Height
- ☐ accY Peak 3 Freq
- ☐ accY Peak 3 Height
- ☐ accY Spectral Power 0.1 - 0.5 Hz
- ☐ accY Spectral Power 0.5 - 1.0 Hz
- ☐ accY Spectral Power 1.0 - 2.0 Hz
- ☒ accY Spectral Power 2.0 - 5.0 Hz ★
- ☐ accZ RMS
- ☐ accZ Peak 1 Freq
- ☐ accZ Peak 1 Height
- ☐ accZ Peak 2 Freq
- ☐ accZ Peak 2 Height
- ☐ accZ Peak 3 Freq
- ☐ accZ Peak 3 Height

- ☐ accZ Spectral Power 0.1 - 0.5 Hz
- ☐ accZ Spectral Power 0.5 - 1.0 Hz
- ☐ accZ Spectral Power 1.0 - 2.0 Hz ★
- ☒ accZ Spectral Power 2.0 - 5.0 Hz ★
- ☒ accX RMS
- ☐ accX Peak 1 Freq
- ☐ accX Peak 1 Height
- ☐ accX Peak 2 Freq
- ☐ accX Peak 2 Height
- ☐ accX Peak 3 Freq
- ☐ accX Peak 3 Height
- ☐ accX Spectral Power 0.1 - 0.5 Hz
- ☐ accX Spectral Power 0.5 - 1.0 Hz
- ☐ accX Spectral Power 1.0 - 2.0 Hz
- ☐ accX Spectral Power 2.0 - 5.0 Hz

## Anomaly explorer (1.862 samples)

X Axis

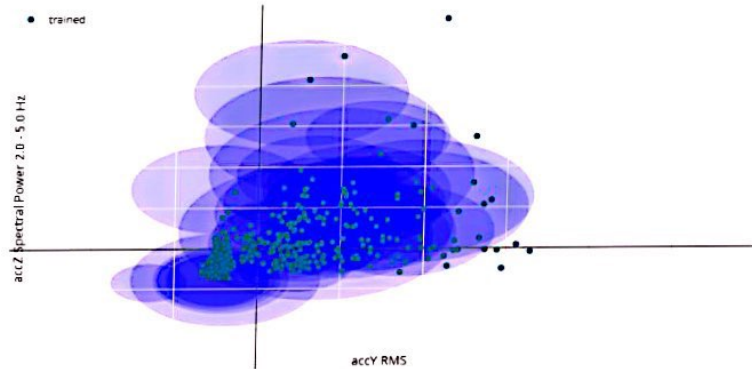
accY RMS

Y Axis

accZ Spectral Power 2.0 - 5.0 H

Test data

— No test data



## Training output

Click 'Start training' to begin