#1 1DConv (16-32) batch 512

Neural Network settings

Training settings

Number of training cycles

200

Learning rate

0.005

Minimum confidence rating

0.60

Audio training options

Data augmentation

Neural network architecture

Architecture presets 1D Convolutional (Default) 2D Convolutional

Input layer (1,183 features)

Reshape layer (13 columns)

1D conv / pool layer (8 neurons, 3 kernel size, 1 layer)

Dropout (rate 0.25)

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

Dropout (rate 0.25)

Flatten layer

Add an extra layer

Output layer (18 features)

Start training

Training output

```
Copying features from processing blocks...
Copying features from DSP block...
Still copying 23%...
Still copying 26%...
Still copying 41%...
Still copying 56%...
```

```
Still copying 71%...
Still copying 85%...
Copying features from DSP block OK
Copying features from processing blocks OK

Splitting data into training and validation sets...
Splitting data into training and validation sets OK

Training model...
```

Model

Model version: Quantized (int8)

Last training performance (validation set)

ACCURACY
54.8%

LOSS
1.67

Confusion matrix (validation set)

	_N	_U	BA	FO	FO	FO	GO	LEFT	NO	OFF	ON	ONE	RIG	ST	TH	TWO	VIS	YES
_NOISE	**95.4%**	0%	0%	0%	0%	0.4%	0%	0.4%	0%	0.4%	0.4%	0%	0%	1.5%	0%	0.8%	0%	0.8%
_UNKNOWN	9.3%	**9.7%**	0.4%	6.6%	1.9%	2.7%	5.4%	3.5%	6.2%	14.7%	9.3%	2.3%	1.2%	9.7%	4.6%	5.8%	3.5%	3.5%
BACKWARD	1.3%	7.3%	**38.6%**	5.2%	2.1%	2.6%	3.0%	5.6%	3.0%	2.6%	4.7%	3.9%	5.6%	5.6%	1.7%	3.9%	1.7%	1.7%
FOLLOW	2.4%	1.2%	0.4%	**40.5%**	4.4%	2.0%	2.8%	0%	1.6%	22.6%	14.3%	1.6%	0.4%	4.4%	0.4%	1.2%	0%	0%
FORWARD	3.2%	0.4%	0%	16.2%	**41.7%**	15.0%	2.0%	0.4%	0.4%	4.0%	10.1%	1.6%	0.4%	1.2%	0%	2.4%	0.8%	0%
FOUR	5%	1.4%	0%	10.5%	8.6%	**45.9%**	2.3%	2.3%	0%	13.2%	2.3%	3.6%	0.5%	0.9%	0%	2.3%	0%	1.4%
GO	4.7%	2.2%	0%	9.1%	2.2%	3.9%	**32.3%**	0.9%	12.9%	11.2%	1.3%	0.4%	0%	13.8%	0%	2.6%	2.6%	0%
LEFT	2.5%	3.0%	0%	0.4%	0%	1.3%	1.7%	**48.5%**	6.8%	4.2%	0.8%	5.1%	4.2%	11.8%	0%	2.1%	0.8%	6.8%
NO	3.9%	2.4%	0.4%	4.7%	0.4%	0%	12.2%	1.2%	**59.2%**	3.5%	0.8%	2.0%	0%	5.9%	0%	1.6%	1.6%	0.4%
OFF	3.8%	0.9%	0%	2.6%	0.4%	2.1%	1.7%	0%	0.4%	**78.7%**	3.4%	0%	0%	5.1%	0%	0%	0.9%	0%
ON	1.9%	2.8%	0%	5.7%	0.9%	0.5%	1.4%	0%	0%	25%	**56.6%**	1.4%	0%	1.9%	0.5%	0.9%	0.5%	0%
ONE	1.3%	3.4%	0%	5.5%	1.3%	3.4%	0.8%	2.9%	1.7%	8.8%	6.3%	**57.6%**	1.7%	3.4%	0%	1.3%	0.4%	0.4%
RIGHT	2.4%	8.1%	0%	0.8%	0%	0%	0.4%	8.9%	0.8%	1.6%	0.4%	2.4%	**64.2%**	4.9%	2.4%	1.2%	0.4%	0.8%
STOP	5.3%	0.4%	0%	2.6%	0%	0.9%	1.3%	0%	0.9%	11.9%	0.4%	0%	0%	**75.8%**	0%	0%	0%	0.4%
THREE	6.0%	3.8%	0%	0.9%	0.9%	1.3%	0.4%	0.4%	0.4%	0.4%	0%	0%	9.8%	0.9%	**54.5%**	16.2%	4.3%	0%
TWO	12.7%	2.5%	0%	1.2%	1.6%	1.6%	6.6%	0.8%	2.5%	0%	0.8%	0%	0.4%	0.8%	2.9%	**61.9%**	2.5%	1.2%
VISUAL	6.3%	2.0%	0.4%	1.2%	0%	0%	1.6%	0.8%	3.2%	0%	0%	0.4%	0%	2.0%	3.2%	11.5%	**65.5%**	2.0%
YES	4.2%	3.0%	0%	0%	0.8%	2.1%	0%	9.7%	7.6%	0.8%	0%	1.7%	0.4%	2.1%	0%	3.0%	4.6%	**59.9%**
F1 SCORE	0.72	0.13	0.55	0.39	0.50	0.48	0.36	0.52	0.58	0.52	0.51	0.63	0.68	0.59	0.64	0.57	0.69	0.67

Feature explorer (full training set)

- _noise - correct
- _unknown - correct
- backward - correct
- follow - correct
- forward - correct
- four - correct
- go - correct
- left - correct
- no - correct
- off - correct
- on - correct
- one - correct
- right - correct
- stop - correct
- three - correct
- two - correct

On-device performance

INFERENCING TIME
8 ms.

PEAK RAM USAGE
6.3K

ROM USAGE
42.0K