

```
In [8]: runfile('C:/Users/Antonio/Desktop/keras/binary/binary_model.py', wdir='C:/Users/Antonio/Desktop/keras/binary')
Reloaded modules: dataset, config, build_model, ternary_layers, ternary_ops,
binary_layers, binary_ops, xnor_layers, quantized_ops, keract
```

Layer (type)	Output Shape	Param #
ternary_conv2d_16 (TernaryCo	(None, 28, 28, 6)	150
batch_normalization_21 (Batc	(None, 28, 28, 6)	24
c1 (Activation)	(None, 28, 28, 6)	0
average_pooling2d_11 (Averag	(None, 14, 14, 6)	0
s1 (Activation)	(None, 14, 14, 6)	0
ternary_conv2d_17 (TernaryCo	(None, 10, 10, 16)	2400
batch_normalization_22 (Batc	(None, 10, 10, 16)	64
c2 (Activation)	(None, 10, 10, 16)	0
average_pooling2d_12 (Averag	(None, 5, 5, 16)	0
s2 (Activation)	(None, 5, 5, 16)	0
ternary_conv2d_18 (TernaryCo	(None, 1, 1, 120)	48000
batch_normalization_23 (Batc	(None, 1, 1, 120)	480
c3 (Activation)	(None, 1, 1, 120)	0
flatten_6 (Flatten)	(None, 120)	0
ternary_dense_11 (TernaryDen	(None, 84)	10080
batch_normalization_24 (Batc	(None, 84)	336
fc1 (Activation)	(None, 84)	0
ternary_dense_12 (TernaryDen	(None, 10)	840
activation_6 (Activation)	(None, 10)	0
Total params: 62,374		
Trainable params: 61,922		
Non-trainable params: 452		

Loading MNIST...

Size of

- training set: 60000 samples
- test set: 10000 samples

Image Shape: (28, 28, 1)

Reshape...

Image Shape: (32, 32, 1)

10000/10000 [=====] - 13s 1ms/step

Test loss 0.9019, accuracy 97.82%

ternary_conv2d_16/clip_by_value:0 (1, 28, 28, 6)
batch_normalization_21/cond/Merge:0 (1, 28, 28, 6)
c1_5/clip_by_value_1:0 (1, 28, 28, 6)
average_pooling2d_11/AvgPool:0 (1, 14, 14, 6)
s1_5/clip_by_value_1:0 (1, 14, 14, 6)
ternary_conv2d_17/clip_by_value:0 (1, 10, 10, 16)
batch_normalization_22/cond/Merge:0 (1, 10, 10, 16)
c2_5/clip_by_value_1:0 (1, 10, 10, 16)
average_pooling2d_12/AvgPool:0 (1, 5, 5, 16)
s2_5/clip_by_value_1:0 (1, 5, 5, 16)
ternary_conv2d_18/clip_by_value:0 (1, 1, 1, 120) -> Skipped. 2D Activations.
batch_normalization_23/cond/Merge:0 (1, 1, 1, 120) -> Skipped. 2D Activations.
c3_5/clip_by_value_1:0 (1, 1, 1, 120) -> Skipped. 2D Activations.
flatten_6/Reshape:0 (1, 120) -> Skipped. 2D Activations.
ternary_dense_11/clip_by_value:0 (1, 84) -> Skipped. 2D Activations.
batch_normalization_24/cond/Merge:0 (1, 84) -> Skipped. 2D Activations.
fc1_5/clip_by_value_1:0 (1, 84) -> Skipped. 2D Activations.
ternary_dense_12/clip_by_value:0 (1, 10) -> Skipped. 2D Activations.
activation_6/Softmax:0 (1, 10) -> Skipped. 2D Activations.

In [9]: