

1. CNN 網路架構

Model: "sequential"

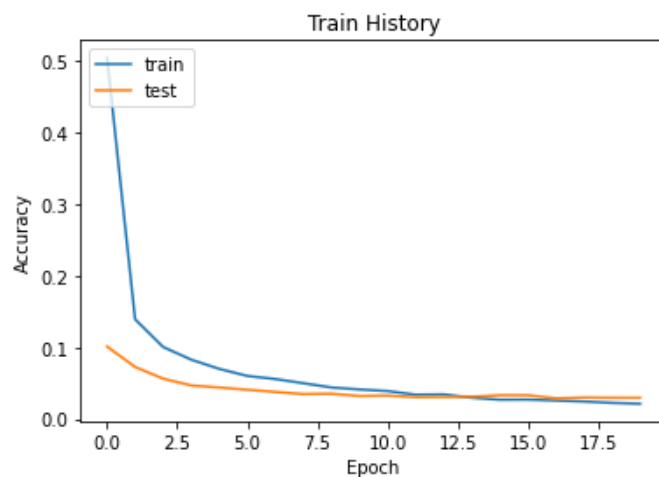
Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 28, 28, 16)	416
max_pooling2d (MaxPooling2D)	(None, 14, 14, 16)	0
conv2d_1 (Conv2D)	(None, 14, 14, 36)	14436
max_pooling2d_1 (MaxPooling2D)	(None, 7, 7, 36)	0
dropout (Dropout)	(None, 7, 7, 36)	0
flatten (Flatten)	(None, 1764)	0
dense (Dense)	(None, 128)	225920
dropout_1 (Dropout)	(None, 128)	0
dense_1 (Dense)	(None, 10)	1290
Total params: 242,062		
Trainable params: 242,062		
Non-trainable params: 0		
None		

2.

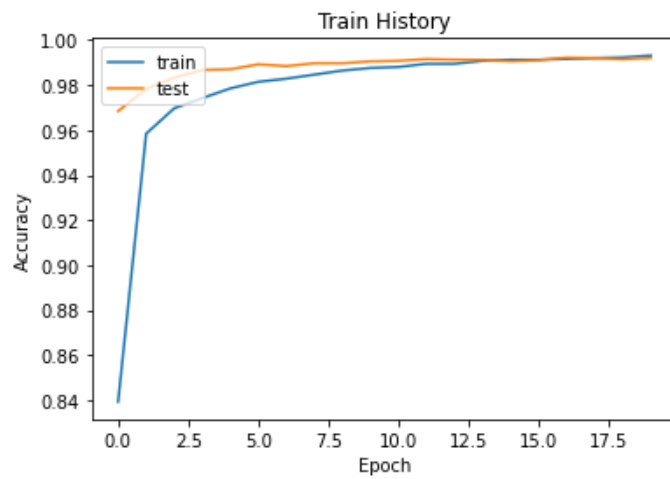
Epoch 設定為 20

Batch size 設定為 300

3. Training loss and validation loss



4. Training and Validation accuracy



5. Test result

Test loss: 0.0194

Test accuracy: 0.9933

6. confusion matrix

predict	0	1	2	3	4	5	6	7	8	9
label										
0	977	0	0	0	0	0	2	1	0	0
1	0	1132	1	0	0	0	0	2	0	0
2	1	0	1025	0	0	0	0	6	0	0
3	0	0	0	1005	0	3	0	1	1	0
4	0	0	0	0	976	0	0	0	1	5
5	1	0	0	5	0	883	1	1	0	1
6	2	2	0	0	1	2	950	0	1	0
7	0	1	0	0	0	0	0	1026	1	0
8	2	1	0	1	0	1	0	2	964	3
9	0	2	0	0	4	3	0	2	3	995