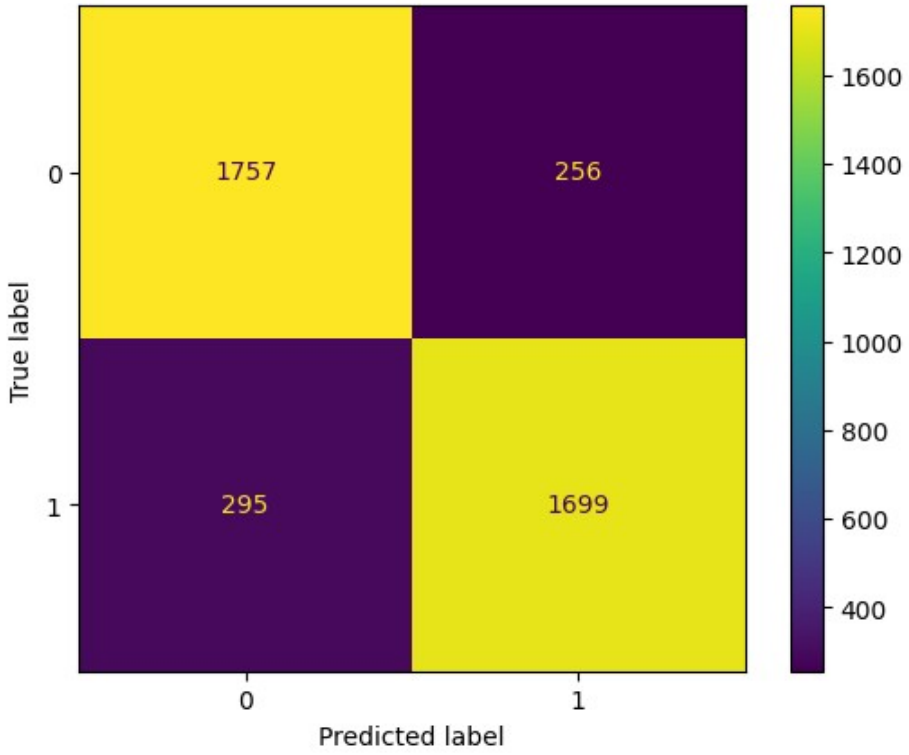
Output-1:

Applied the tweaked densenet architecture from scratch on TrainingData.csv and a customised data set reviews.csv which is based on reviews dataset

Results on DES:

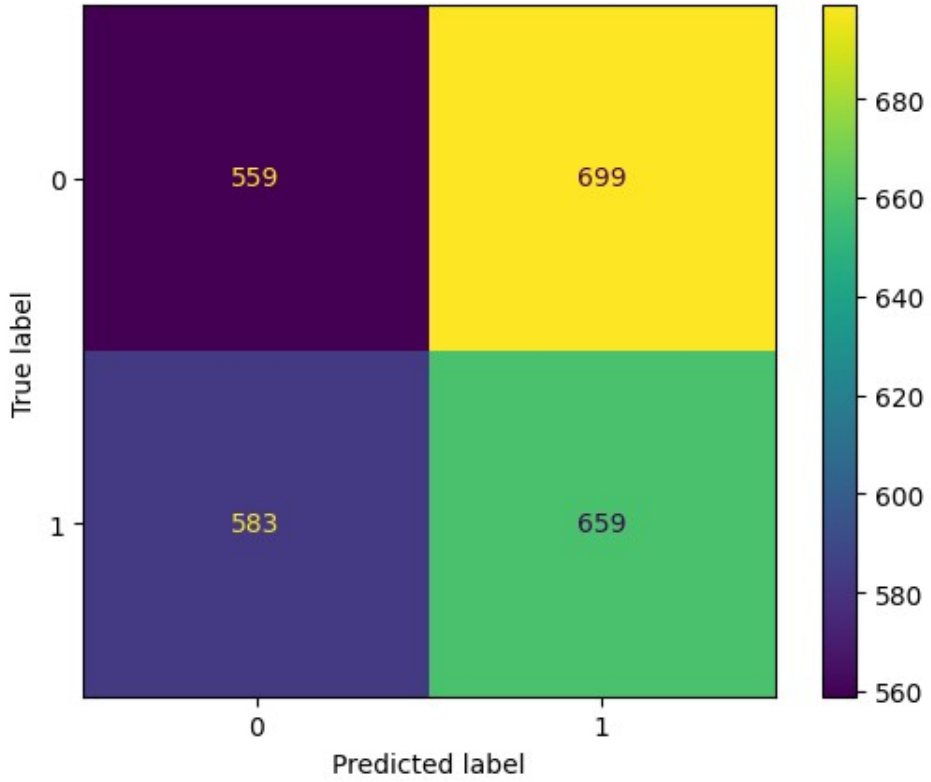
1. On TrainingData.csv



random accuracy : 0.8728266269249876
DES accuracy : 0.8520561685055166

	precision	recall	f1-score	support
0	0.86	0.87	0.86	2013
1	0.87	0.85	0.86	1994
accuracy			0.86	4007
macro avg	0.86	0.86	0.86	4007
weighted avg	0.86	0.86	0.86	4007

2. reviews.csv(25000 = 12500 des + 12500 random)



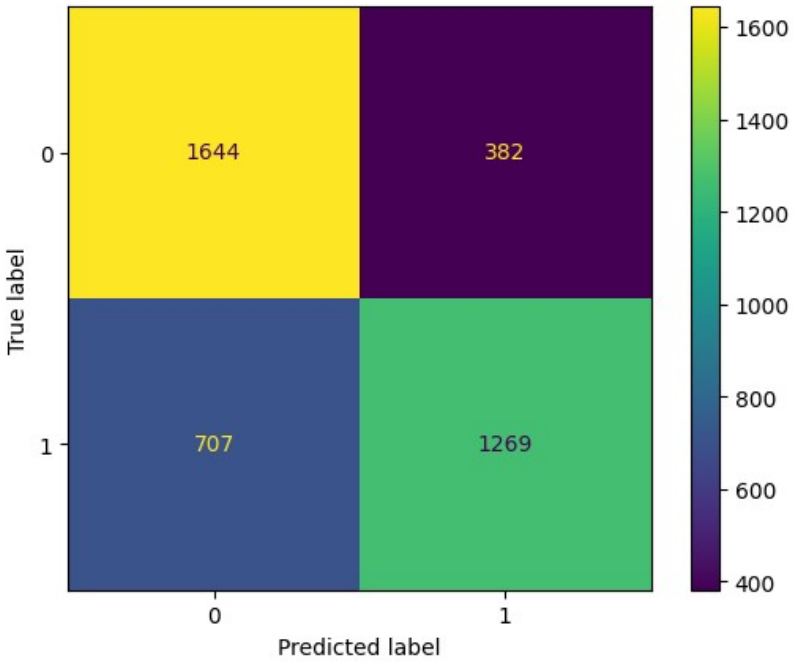
	precision	recall	f1-score	support
0	0.49	0.44	0.47	1258
1	0.49	0.53	0.51	1242
accuracy			0.49	2500
macro avg	0.49	0.49	0.49	2500
weighted avg	0.49	0.49	0.49	2500

Observation: Results are inconsistent, should try on learning how TrainingData.csv has been generated and also work with other datasets to check for consistency in results.

Output – 2:

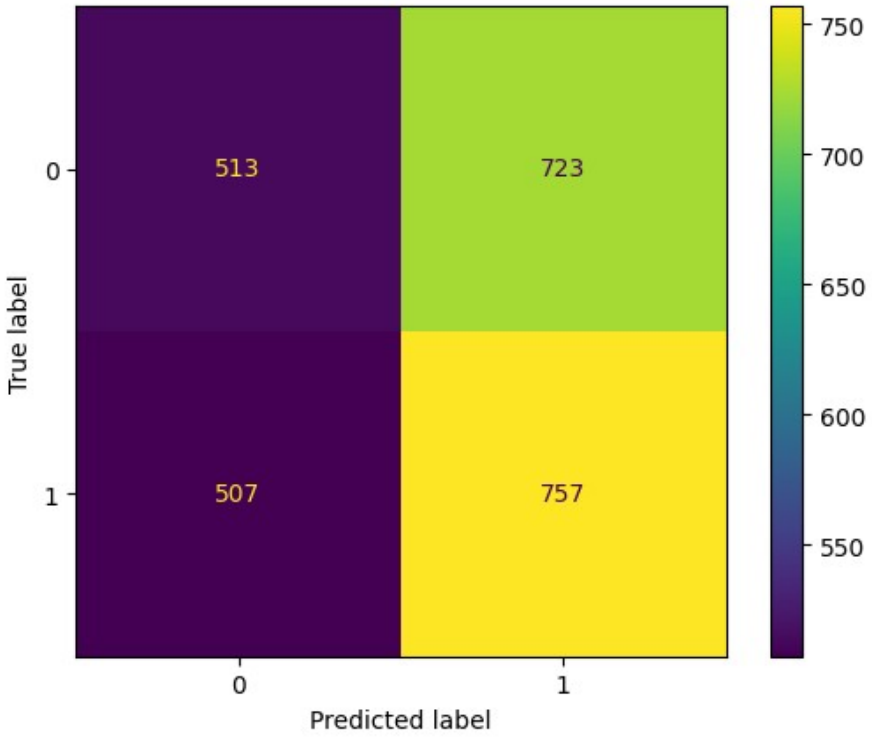
Applied same on AES data

1. on TrainingData.csv




```
random_accuracy =  0.8114511352418559
AES accuracy =  0.6422064777327935
```

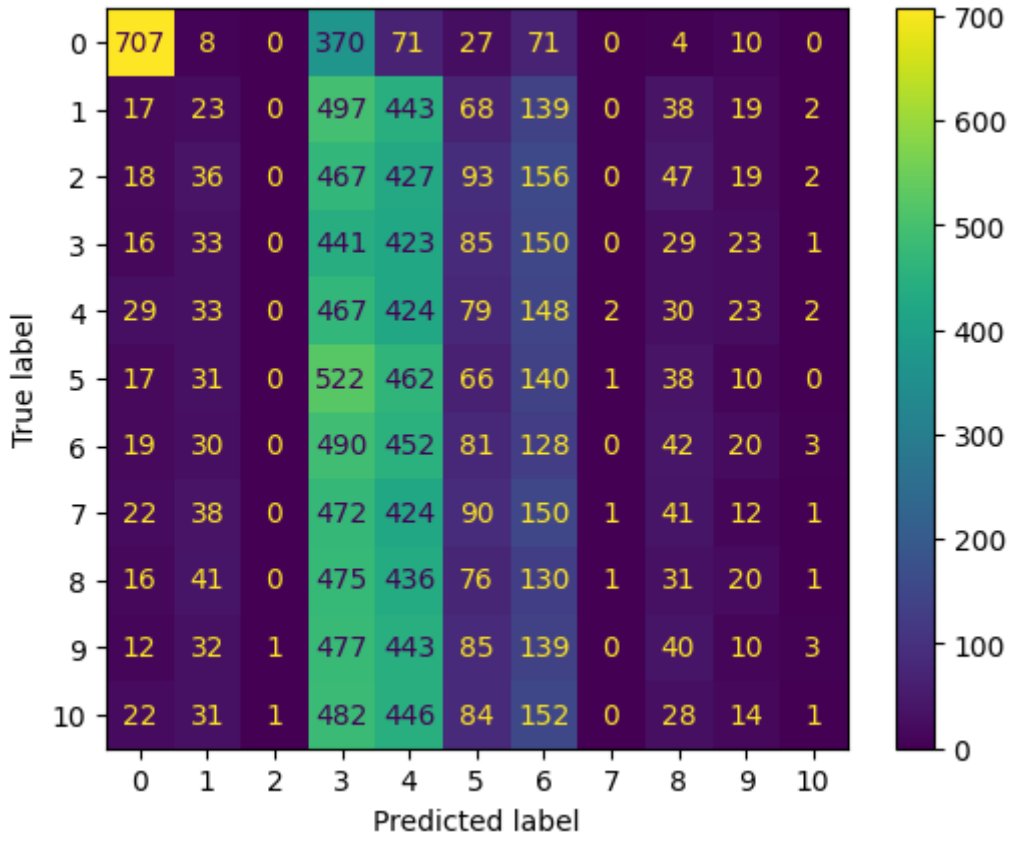
2. on reviews.csv



random_accuracy = 0.41504854368932037
AES accuracy = 0.5988924050632911

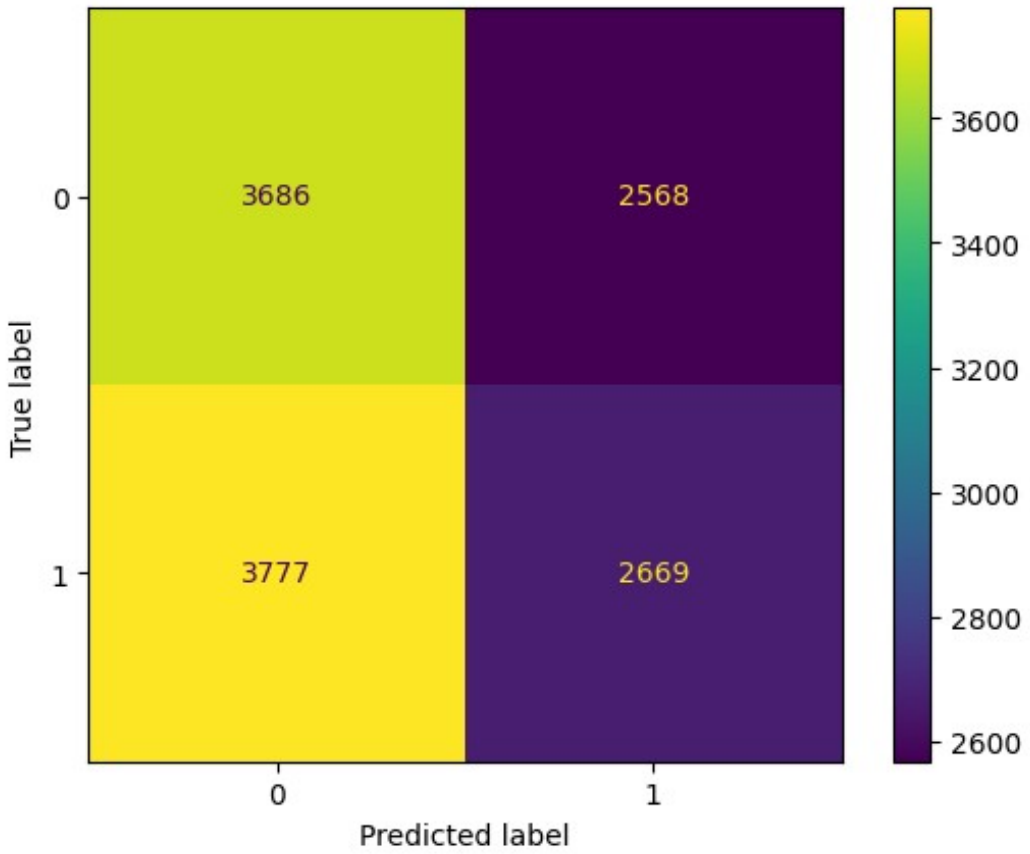
Output – 3

AES – round reduced result



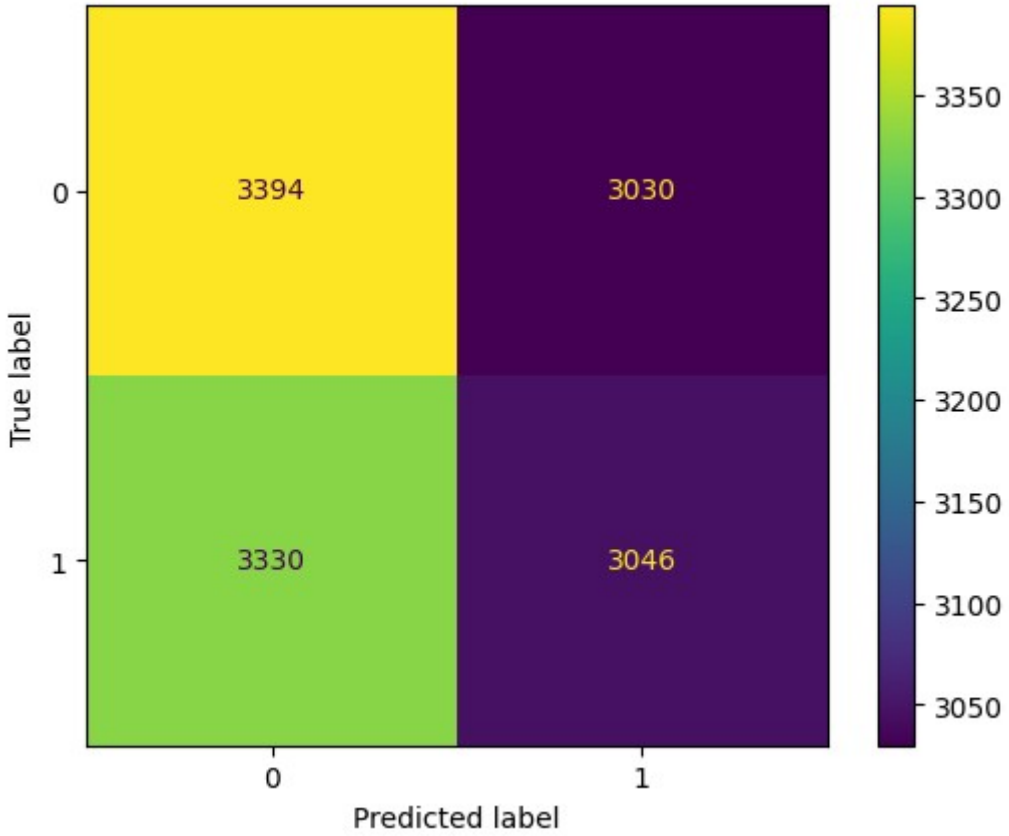
	precision	recall	f1-score	support
0	0.79	0.56	0.65	1268
1	0.07	0.02	0.03	1246
2	0.00	0.00	0.00	1265
3	0.09	0.37	0.14	1201
4	0.10	0.34	0.15	1237
5	0.08	0.05	0.06	1287
6	0.09	0.10	0.09	1265
7	0.20	0.00	0.00	1251
8	0.08	0.03	0.04	1227
9	0.06	0.01	0.01	1242
10	0.06	0.00	0.00	1261
accuracy			0.13	13750
macro avg	0.15	0.13	0.11	13750
weighted avg	0.15	0.13	0.11	13750

Output – 4
Rotation invariant – left shift – DES



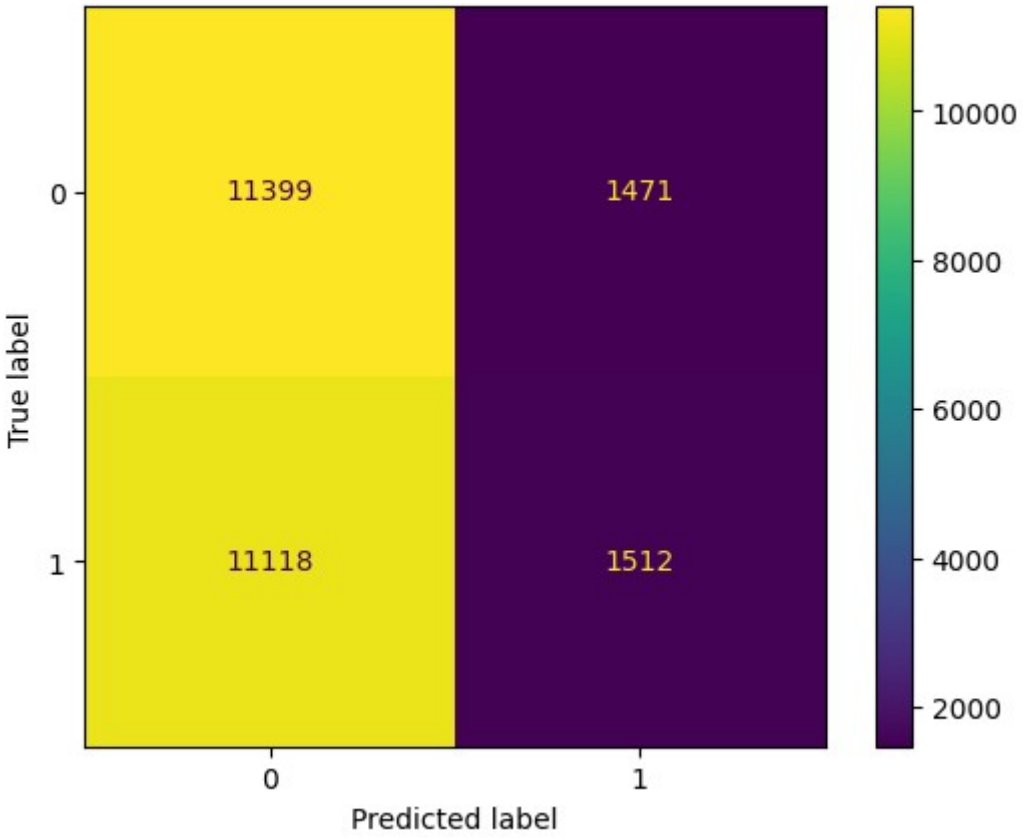
	precision	recall	f1-score	support
0	0.49	0.59	0.54	6254
1	0.51	0.41	0.46	6446
accuracy			0.50	12700
macro avg	0.50	0.50	0.50	12700
weighted avg	0.50	0.50	0.50	12700

DES – right shift



	precision	recall	f1-score	support
0	0.50	0.53	0.52	6424
1	0.50	0.48	0.49	6376
accuracy			0.50	12800
macro avg	0.50	0.50	0.50	12800
weighted avg	0.50	0.50	0.50	12800

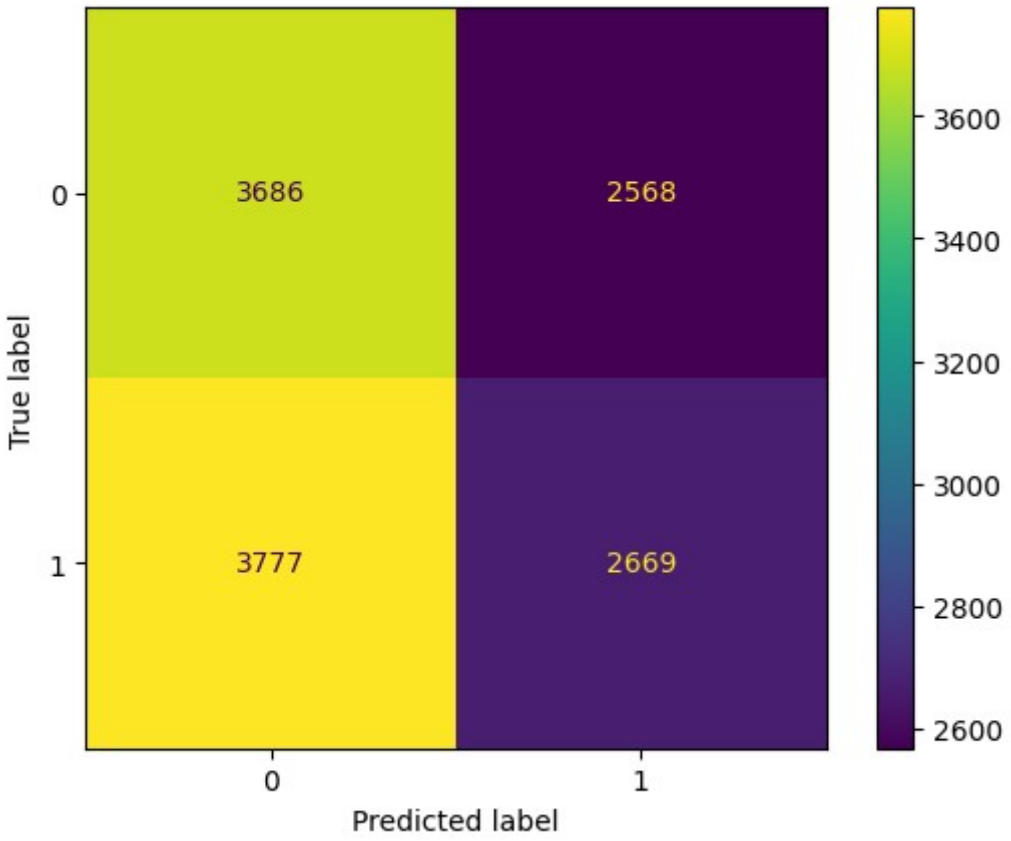
DES – both shifts



	precision	recall	f1-score	support
0	0.51	0.89	0.64	12870
1	0.51	0.12	0.19	12630
accuracy			0.51	25500
macro avg	0.51	0.50	0.42	25500
weighted avg	0.51	0.51	0.42	25500

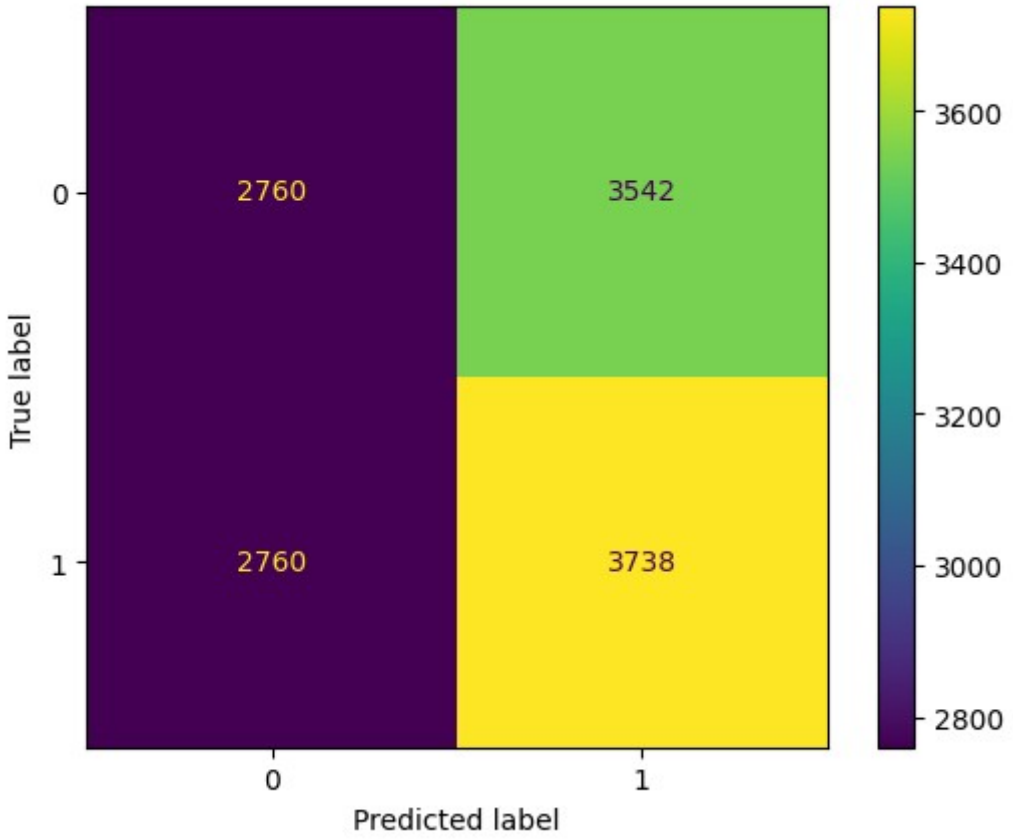
Output – 5

Rotation invariant – left shift – AES



	precision	recall	f1-score	support
0	0.49	0.59	0.54	6254
1	0.51	0.41	0.46	6446
accuracy			0.50	12700
macro avg	0.50	0.50	0.50	12700
weighted avg	0.50	0.50	0.50	12700

Rotation invariant – right shift – AES



	precision	recall	f1-score	support
0	0.50	0.44	0.47	6302
1	0.51	0.58	0.54	6498
accuracy			0.51	12800
macro avg	0.51	0.51	0.50	12800
weighted avg	0.51	0.51	0.51	12800

Both shifts

	precision	recall	f1-score	support
0	0.49	0.03	0.05	12734
1	0.50	0.97	0.66	12766
accuracy			0.50	25500
macro avg	0.50	0.50	0.36	25500
weighted avg	0.50	0.50	0.36	25500