I. RESNET-50

1) Validation size 50
2) Lrate 1e-5
3) EarlyStopping 10 epochs without validation accuracy increasing

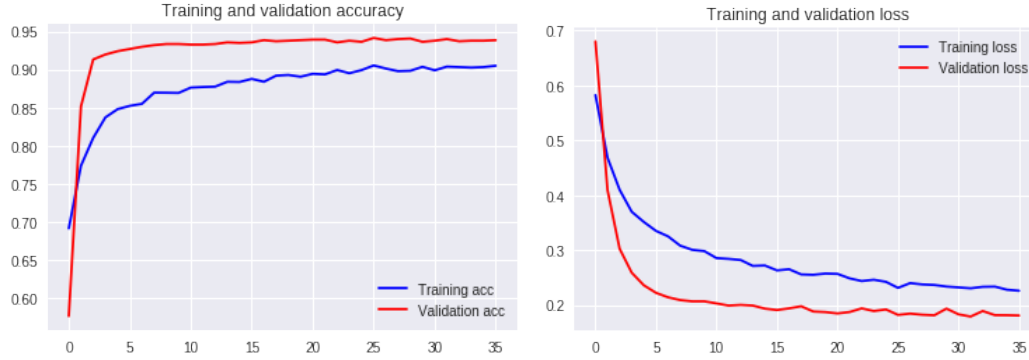**Flatten - Softmax Classifier** Validation Accuracy obtained: 0.93913

Table I
RESNET -FLATTEN - SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.96	0.97	0.96	1172
Litter	0.82	0.76	0.79	208
avg / total	0.94	0.94	0.94	1380

Flatten – FCN 1024 width – Softmax Classifier Validation Accuracy obtained 0.94928

Table II
RESNET -FLATTEN – FCN 1024 WIDTH - SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.95	0.98	0.97	1172
Litter	0.88	0.74	0.80	208
avg / total	0.94	0.94	0.94	1380

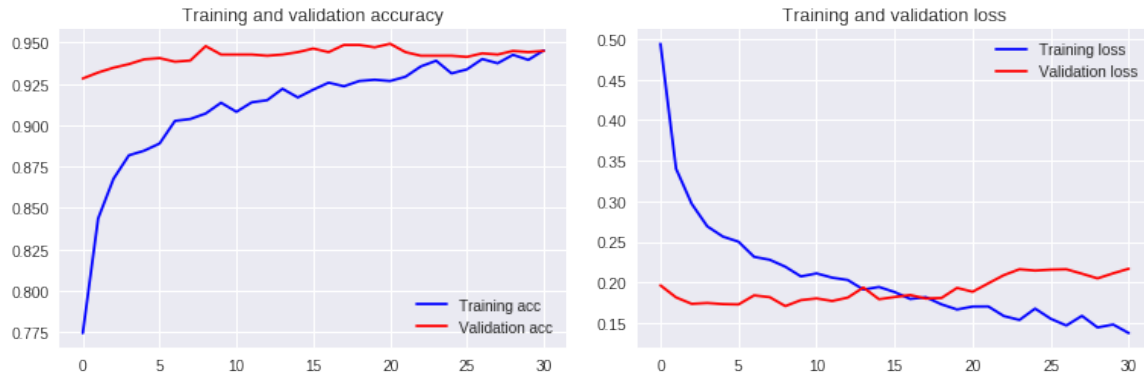**Flatten – FCN 2048 width – Softmax Classifier** Validation Accuracy obtained 0.94565

Table III
RESNET - FLATTEN - FCN 2048 WIDTH – SOFTMAX CLASSIFIER

	precision	recall	f1-score	support
No Litter	0.95	0.99	0.97	1172
Litter	0.90	0.72	0.80	208
avg / total	0.94	0.95	0.94	1380

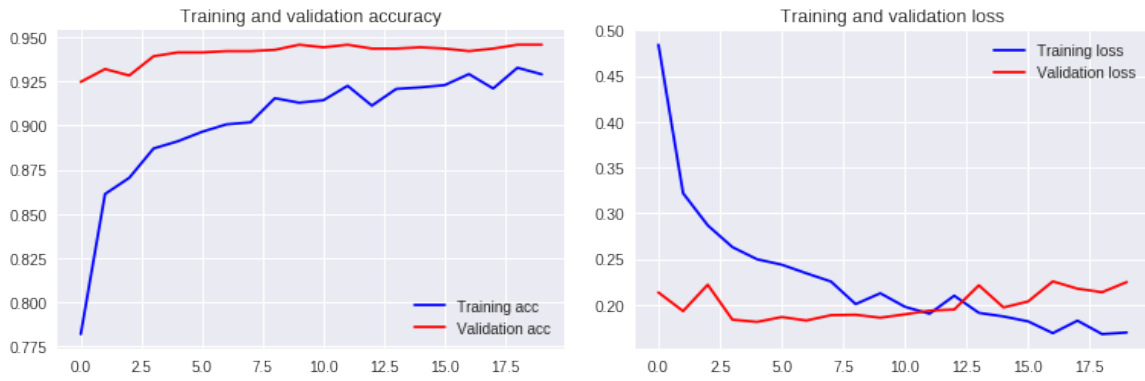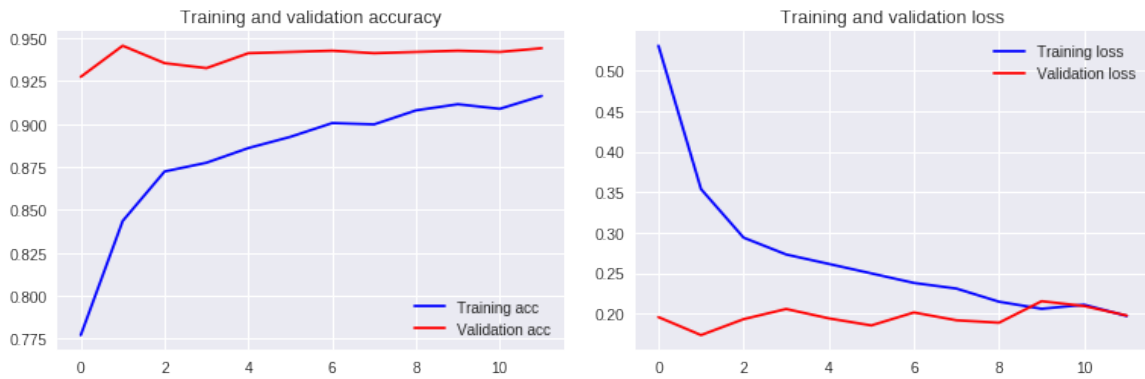**Flatten – FCN 4096 width – Softmax Classifier** Validation Accuracy obtained 0.94565

Table IV
RESNET - FLATTEN – FCN 4096 WIDTH – SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.96	0.98	0.97	1172
Litter	0.87	0.74	0.80	208
avg / total	0.94	0.94	0.94	1380

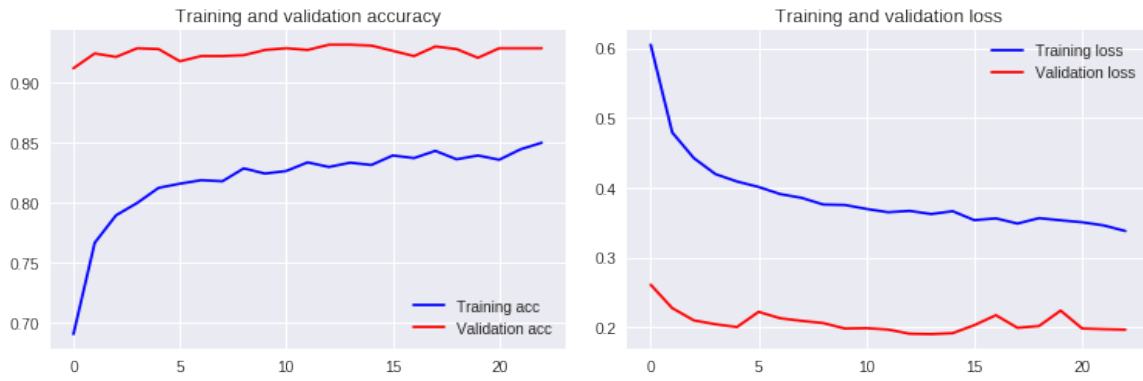**Flatten – FCN 1024 – FCN 1024 width – Softmax Classifier** Validation Accuracy obtained 0.93116

Table V
RESNET - FLATTEN – FCN 1024 – FCN 1024 WIDTH – SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.93	0.99	0.96	1172
Litter	0.90	0.59	0.71	208
avg / total	0.93	0.93	0.92	1380

Resnet - Flatten – FCN 1024 width – Softmax Classifier Resnet Block 5 trainable Validation Accuracy obtained 0.94855

Table VI
RESNET - FLATTEN – FCN 1024 WIDTH – SOFTMAX CLASSIFIER RESNET BLOCK 5 TRAINABLE RESULTS

	precision	recall	f1-score	support
No Litter	0.91	0.99	0.95	1172
Litter	0.86	0.48	0.61	208
avg / total	0.91	0.91	0.90	1380

Flatten – FCN 1024 width – Softmax Classifier Resnet Block 4&5 trainable Validation Accuracy obtained 0.94565
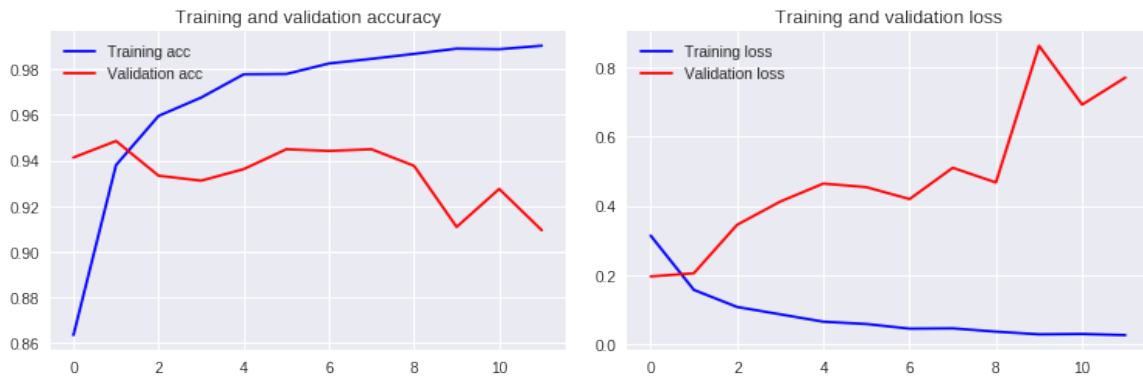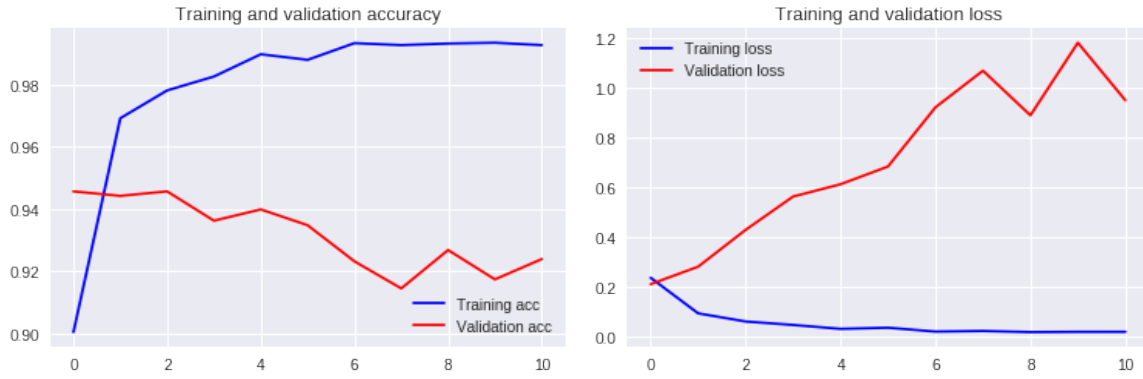
Table VII

RESNET - FLATTEN – FCN 1024 WIDTH – SOFTMAX CLASSIFIER RESNET BLOCK 4&5 TRAINABLE RESULTS

	precision	recall	f1-score	support
No Litter	0.92	0.99	0.96	1172
Litter	0.94	0.53	0.68	208
avg / total	0.93	0.92	0.91	1380

II. MOBILENET V3

1) Batch size 150
2) Validation size 50
3) Lrate 1e-5

EarlyStopping 10 epochs without validation accuracy increasing

Mobilenet - Flatten – Softmax Classifier : Non-converging

Table VIII

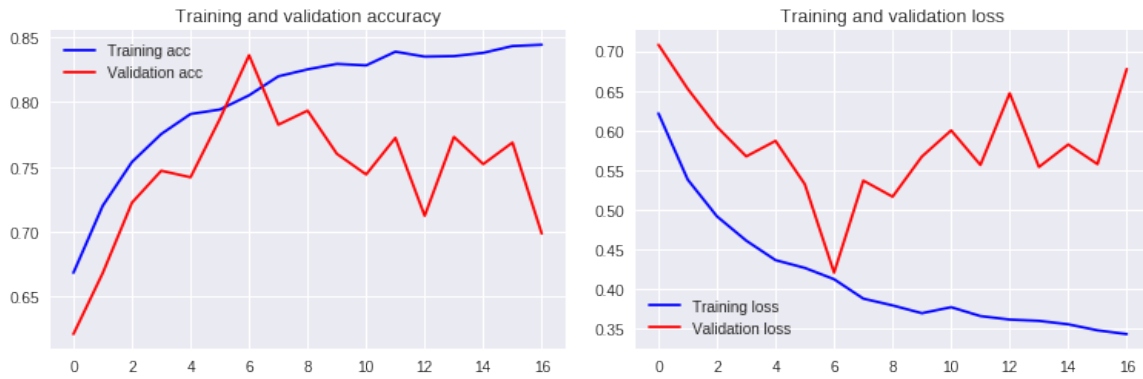MOBILENET - FLATTEN – SOFTMAX CLASSIFIER : NON-CONVERGING RESULTS

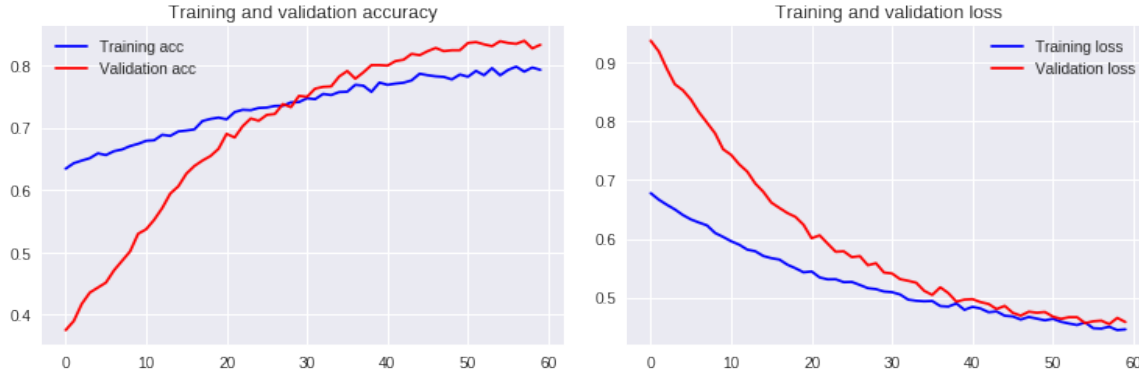|	precision	recall	f1-score	support
No Litter	0.96	0.84	0.90	1172
Litter	0.47	0.82	0.60	208
avg / total	0.89	0.84	0.85	1380

Mobilenet Global Average Pooling 2d - Softmax Classifier: Validation Accuracy obtained 0.8233

Table IX
MOBILENET - GLOBAL AVERAGE POOLING 2D – SOFTMAX CLASSIFIER RESULTS

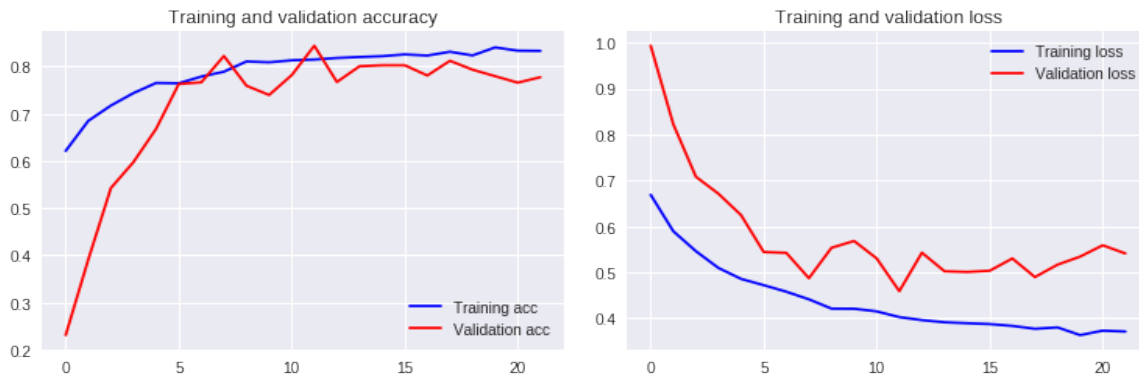|	precision	recall	f1-score	support
No Litter	0.95	0.85	0.90	1172
Litter	0.48	0.77	0.59	208
avg / total	0.88	0.84	0.85	1380

Mobilenet - Global Average Pooling 2d – FCN 1024 width – Softmax Classifier: Validation Accuracy obtained 0.84420

Table X
MOBILENET - GLOBAL AVERAGE POOLING 2D – FCN 1024 WIDTH – SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.98	0.83	0.90	1172
Litter	0.49	0.91	0.64	208
avg / total	0.91	0.84	0.86	1380

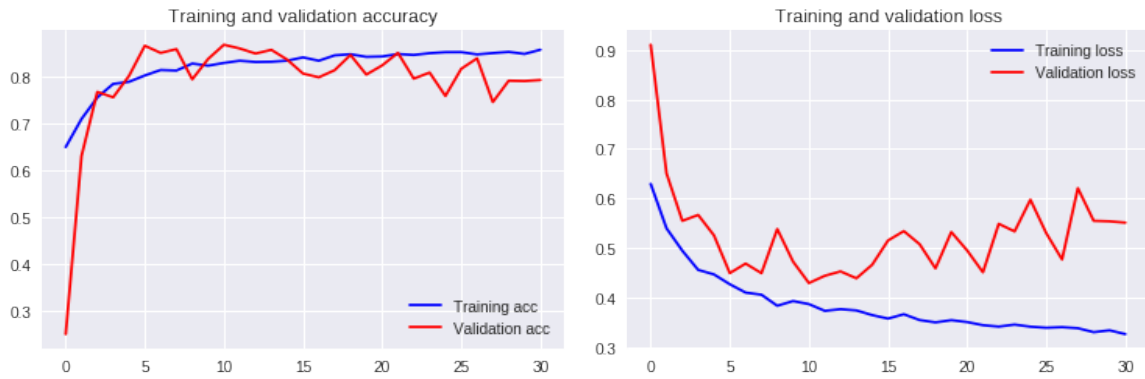**Mobilenet - Global Average Pooling 2d - FCN 2048 width – Softmax Classifier**: Validation Accuracy obtained 0.86739

Table XI
MOBILENET - GLOBAL AVERAGE POOLING 2D – FCN 2048 WIDTH – SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.98	0.86	0.92	1172
Litter	0.54	0.90	0.67	208
avg / total	0.91	0.87	0.88	1380

Mobilenet - Global Average Pooling 2d – FCN 4096 width – Softmax Classifier: Validation Accuracy obtained 0.86449

Table XII
MOBILENET - GLOBAL AVERAGE POOLING 2D – FCN 4096 WIDTH – SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.97	0.86	0.92	1172
Litter	0.53	0.87	0.66	208
avg / total	0.91	0.86	0.88	1380

Mobilenet - Global Average Pooling 2d - FCN 2048 width - FCN 2048 width - Softmax Classifier: Validation Accuracy obtained 0.81884
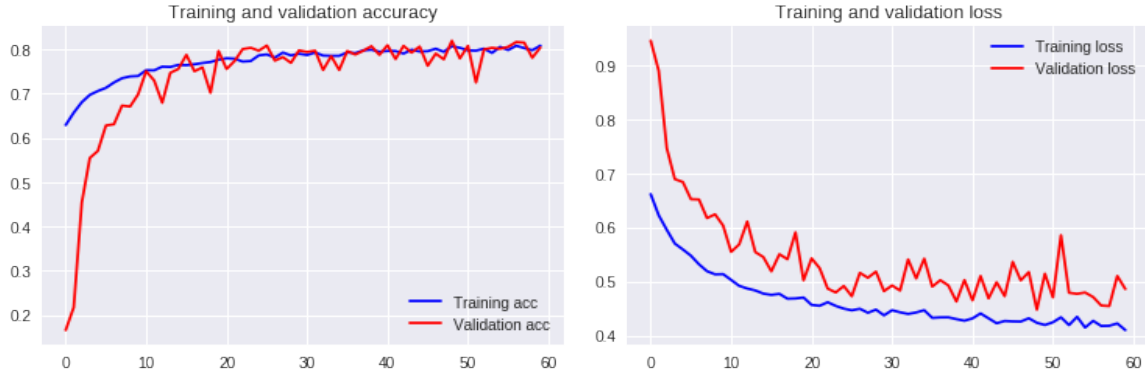
Table XIII

MOBILENET - GLOBAL AVERAGE POOLING 2D – FCN 2048 WIDTH – FCN 2048 WIDTH – SOFTMAX CLASSIFIER RESULTS

	precision	recall	f1-score	support
No Litter	0.97	0.81	0.88	1172
Litter	0.45	0.88	0.59	208
avg / total	0.89	0.82	0.84	1380

Mobilenet - Global Average Pooling 2d - FCN 2048 width - Softmax Classifier conv block (13) trainable : Validation Accuracy obtained 0.9514

Table XIV

MOBILENET - GLOBAL AVERAGE POOLING 2D - FCN 2048 WIDTH - SOFTMAX CLASSIFIER CONV BLOCK (13) TRAINABLE RESULTS

No Litter	0.91	0.99	0.95	1172
Litter	0.94	0.46	0.62	208
avg / total	0.92	0.91	0.90	1380

Mobilenet - Global Average Pooling 2d - FCN 2048 width - Softmax Classifier 2 conv block trainable : Validation Accuracy obtained 0.9514

Table XV

MOBILENET - GLOBAL AVERAGE POOLING 2D - FCN 2048 WIDTH - SOFTMAX CLASSIFIER 2 CONV BLOCK TRAINABLE RESULTS

NoLitter	0.93	0.99	0.96	1172
Litter	0.95	0.57	0.71	208
avg / total	0.93	0.93	0.92	1380

Accuracy improvement stops therefore we assume that layers are already trained.