I. Mobilenet v3 Training Schedule

1) Batch size:150
2) Validation size:50
3) Learning rate 1e-5

EarlyStopping 10 epochs without validation accuracy increasing

Mobilenet Conv + Flatten + Softmax Classifier

CNN non-converging

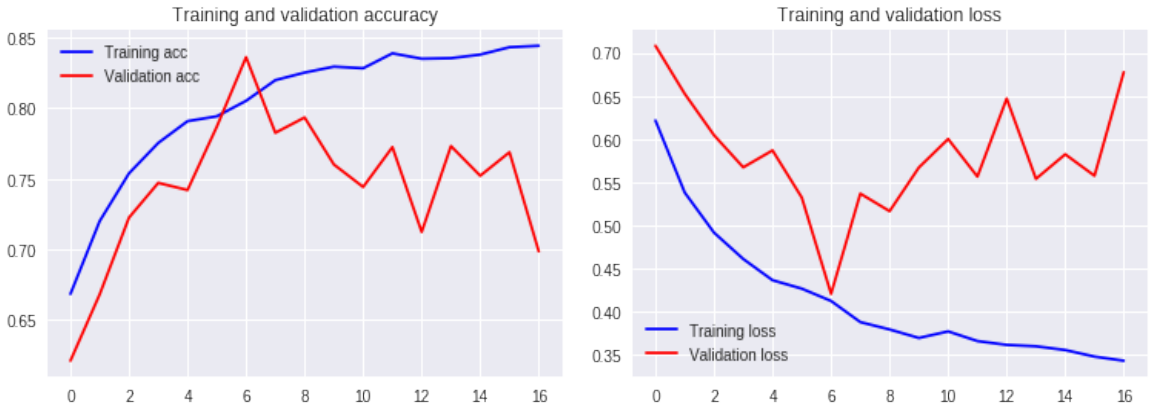
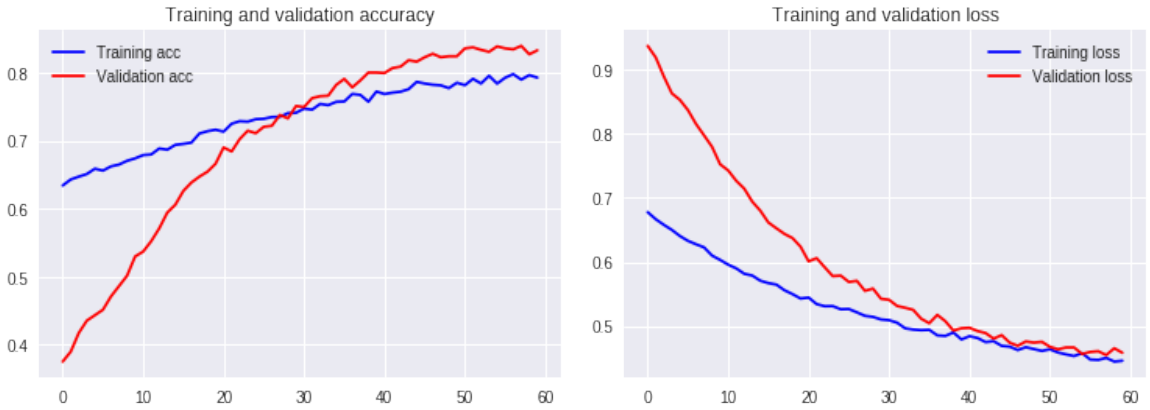


TABLE I
Mobilenet Training - Results for Mobilenet + Flatten + Softmax

	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 Conv + Global AveragePooling2D + Softmax Classifier

Accuracy Obtained : 0.8233



Mobilenet Conv + Global AveragePooling2D + FCN 1024 width + Softmax Classifier

Accuracy obtained: 0.84420

TABLE II
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + SOFTMAX

	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

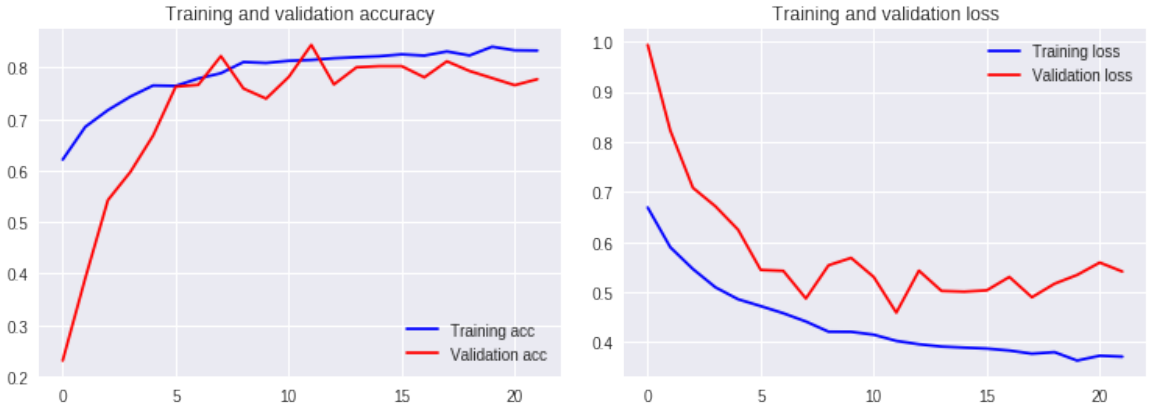
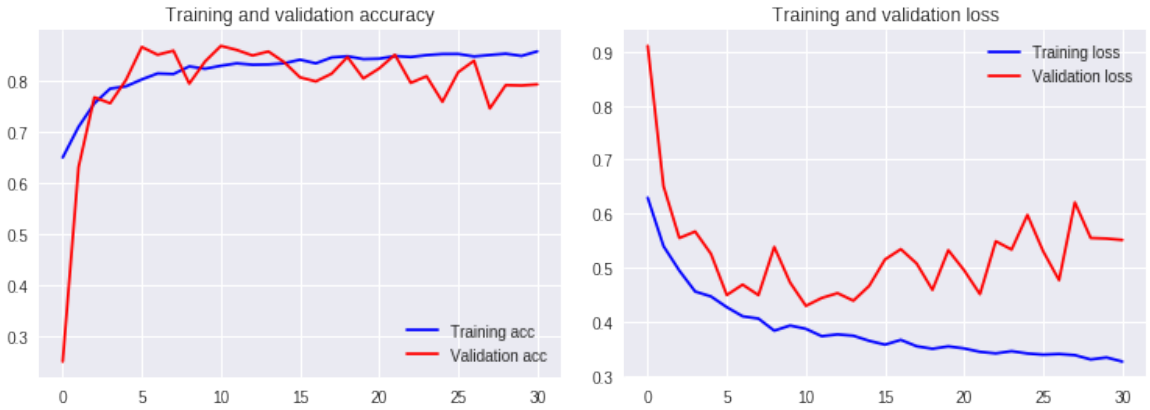


TABLE III
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + FCN 1024 WIDTH + SOFTMAX

	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 Conv + Global AveragePooling2D + FCN 2048 width + Softmax Classifier
Accuracy Obtained: 0.86739



Mobilenet Conv + Global AveragePooling2D + FCN 4096 width + Softmax Classifier
Accuracy Obtained: 0.86449

TABLE IV
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + FCN 2048 WIDTH + SOFTMAX

	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

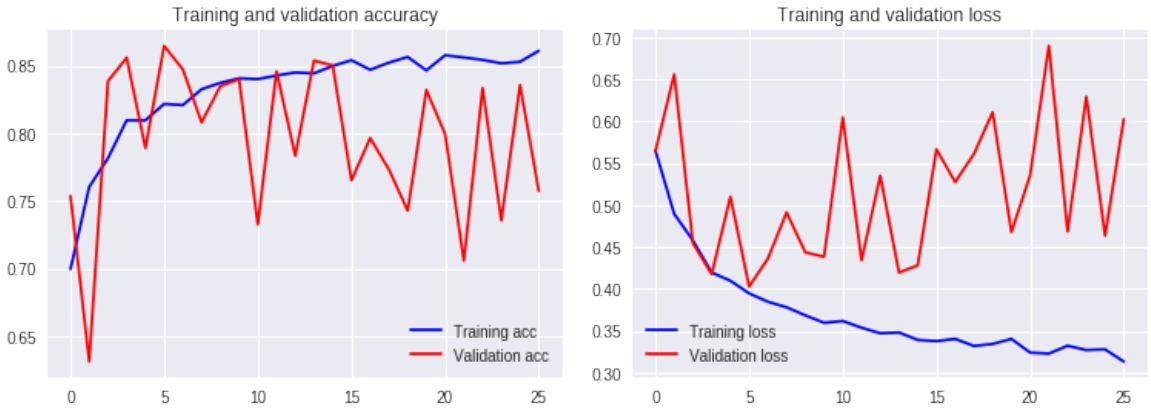
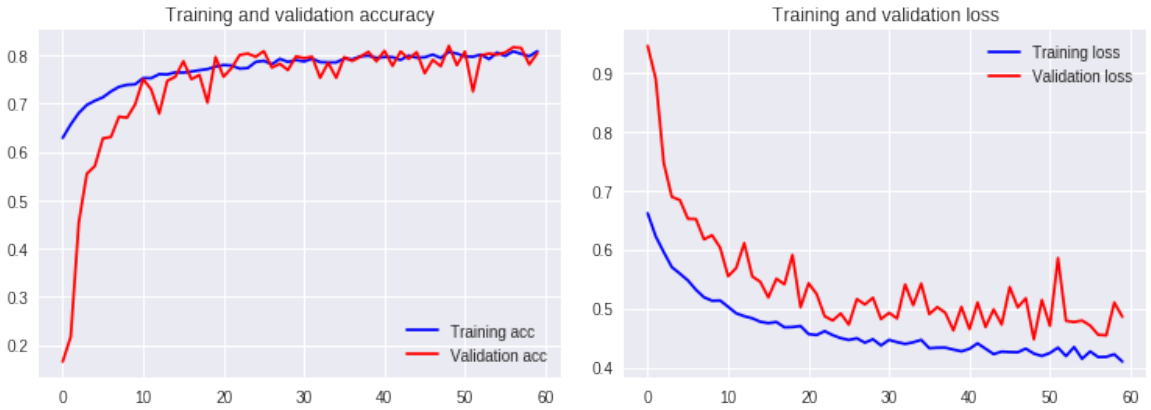


TABLE V
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + FCN 4096 WIDTH + SOFTMAX

	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 Conv + Global AveragePooling2D + FCN 2048 width + FCN 2048 width + Softmax Classifier Accuracy obtained 0.81884



Mobilenet Conv + Global AveragePooling2D + FCN 1024 width + Softmax Classifier Mobilenet last conv block (13) trainable 0.9514

TABLE VI
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + FCN 1024 WIDTH + FCN 1024 WIDTH + SOFTMAX

	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

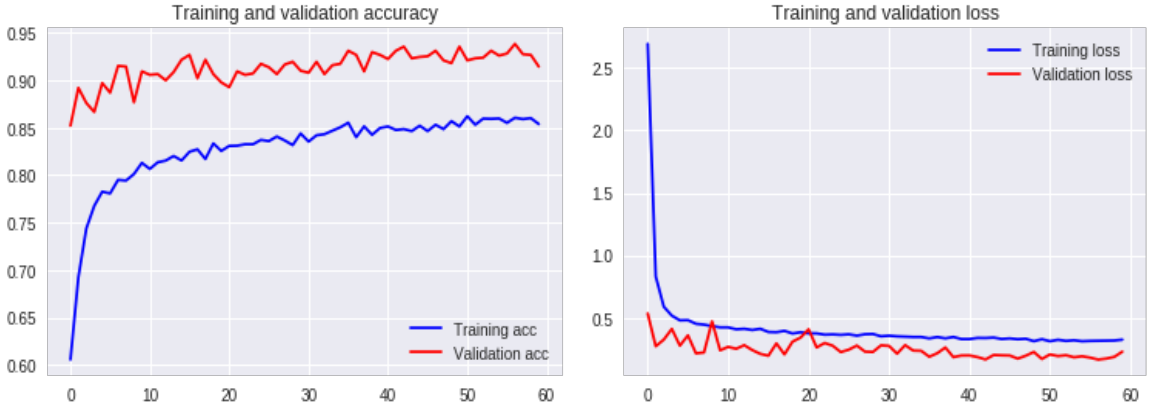


TABLE VII
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + FCN 1024 WIDTH + SOFTMAX (TRAIN CONV BLOCK 13)

	Precision	Recall	F1-Score	Support
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 last 2 conv block (12 and 13) trainable 0.9514

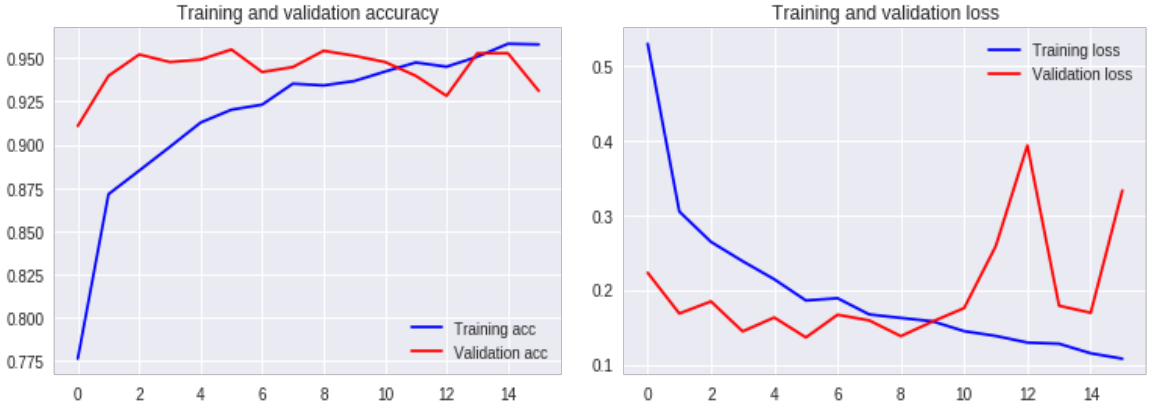


TABLE VIII
MOBILENET TRAINING - RESULTS FOR MOBILENET + GAP2D + FCN 1024 WIDTH + SOFTMAX (TRAIN CONV BLOCK 12 AND 13

	Precision	Recall	F1-Score	Support
No Litter	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. [1]

REFERENCES

[1] M. Z. Alom, T. M. Taha, C. Yakopcic, S. Westberg, M. Hasan, B. C. Van Esesn, A. A. S. Awwal, and V. K. Asari, "The History Began from AlexNet: A Comprehensive Survey on Deep Learning Approaches," *arXiv preprint arXiv:1803.01164*, 2018. [Online]. Available: http://arxiv.org/abs/1803.01164