

# Generative OpenMax for Multi-Class Open Set Classification

BMVC 2017 Submission # 104

## Network Architectures

We set hyper-parameters following existing DCGAN work [1].

Table 1: Classifier

Layer-type	Kernel	Stride/Pad	Filters	Activation	Norm
Convolution	(3,3)	1/1	32	ReLU	-
Max Pooling	(2,2)	2/0	-	-	-
Convolution	(3,3)	1/1	64	ReLU	-
Max Pooling	(2,2)	2/0	-	-	-
Fully-Connected	-	-	1024	Relu	-
Dropout	0.5 ratio	-	-	-	-
Softmax Classifier	-	-	K/K+1	-	-

Table 2: Generator

Layer-type	Kernel	Stride/Pad	Filters	Activation	Norm
Concatenation of $z$ and $c/b$					
Fully-Connected	-	-	1024	Relu	-
Fully-Connected	-	-	512	Relu	-
Fully-Convolution	(4,4)	2/2	128	Relu	BN
Fully-Convolution	Image Size	2/2	1	Relu	BN
Output-Layer	-	-	-	-	Tanh

Table 3: Discriminator

Layer-type	Kernel	Stride/Pad	Filters	Activation	Norm
Convolution	(3,3)	1/1	64	ReLU	-
Max Pooling	(2,2)	2/0	-	-	-
Convolution	(3,3)	1/1	64	ReLU	BN
Max Pooling	(2,2)	2/0	-	-	-
Fully-Connected	-	-	256	Relu	-
Fully-Connected	-	-	1	Sigmoid	-

## References

- [1] Alec Radford, Luke Metz, and Soumith Chintala. Unsupervised representation learning with deep convolutional generative adversarial networks. *ICLR*, 2016.