



HW2



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1. Model architecture:結構如下圖

其中:最後一個 layer 輸出通過 Sigmoid function，把輸出的值控制到 0-1 之間;Upsampling 的方法使用雙線性插值法，將 feature map 放大 2 倍;而為了提高 model 的 performs，加入了 BatchNorm2d layer，最終訓練 loss 較未加前低，且 model 收斂效果更佳。

Total params: 40,707

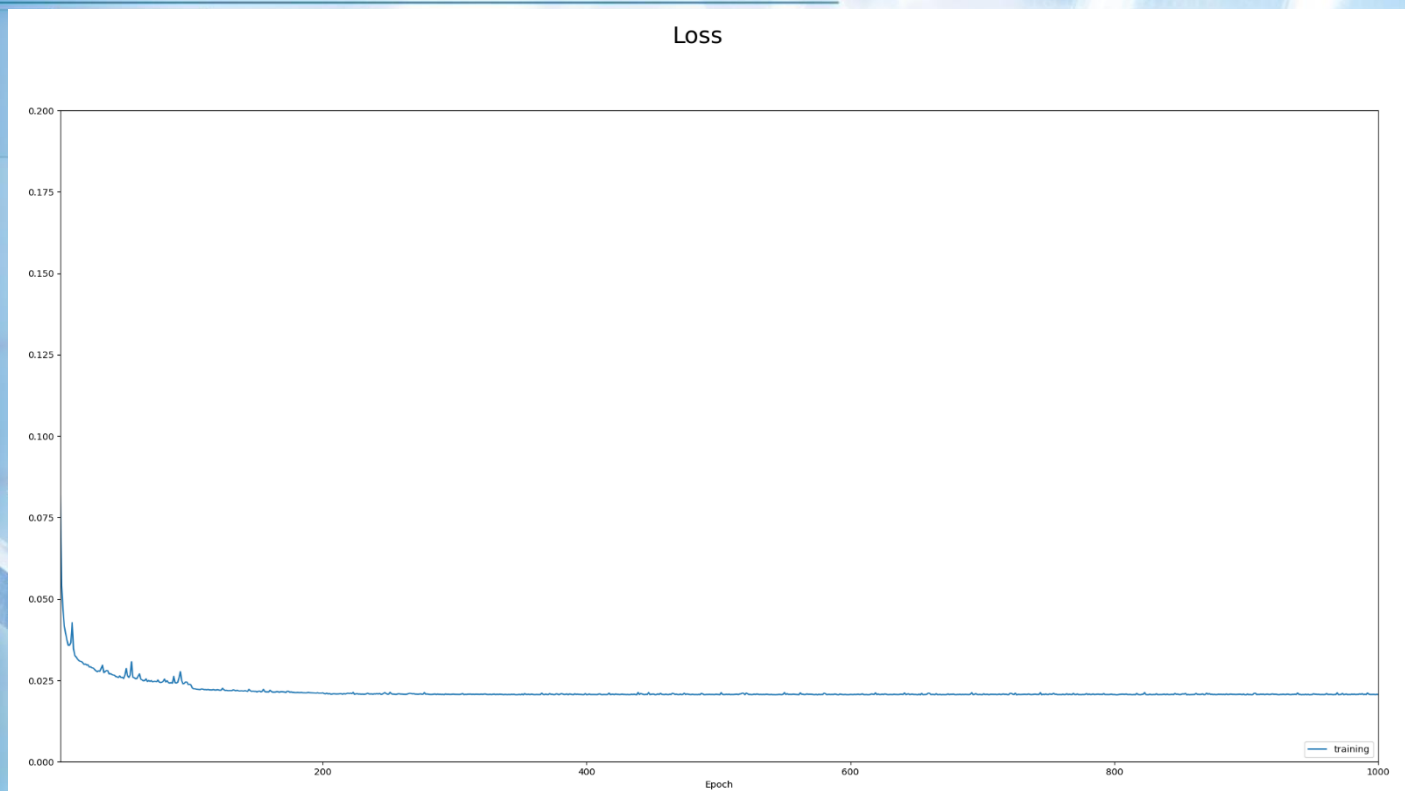
Trainable params: 40,707

Non-trainable params: 0

Layer (type)	Output Shape	Param #
Conv2d-1	[1, 64, 26, 26]	1,792
ReLU-2	[1, 64, 26, 26]	0
BatchNorm2d-3	[1, 64, 26, 26]	128
MaxPool2d-4	[1, 64, 13, 13]	0
Encoder-5	[1, 64, 13, 13]	0
ConvTranspose2d-6	[1, 64, 13, 13]	36,928
ReLU-7	[1, 64, 13, 13]	0
BatchNorm2d-8	[1, 64, 13, 13]	128
ConvTranspose2d-9	[1, 3, 26, 26]	1,731
Decoder-10	[1, 3, 26, 26]	0

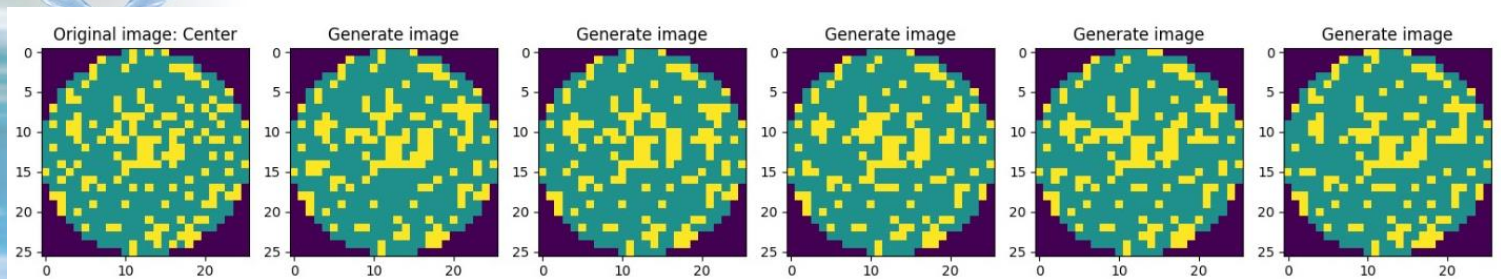
Training loss function:訓練時，考慮到了 2 個 loss function，Mean square error 和 Binary Cross Entropy，分別使用兩種 loss 訓練，發現 Mean square error 收斂效果較好。

2. Loss curve:

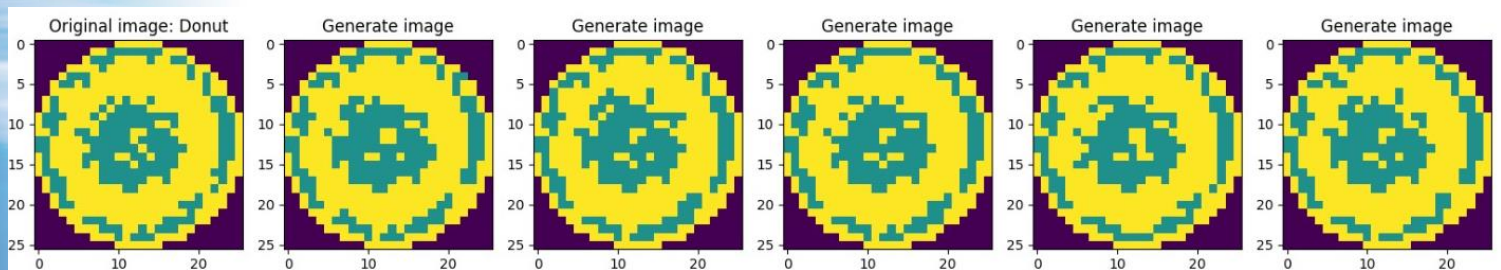


3. 5 generated samples for each class:

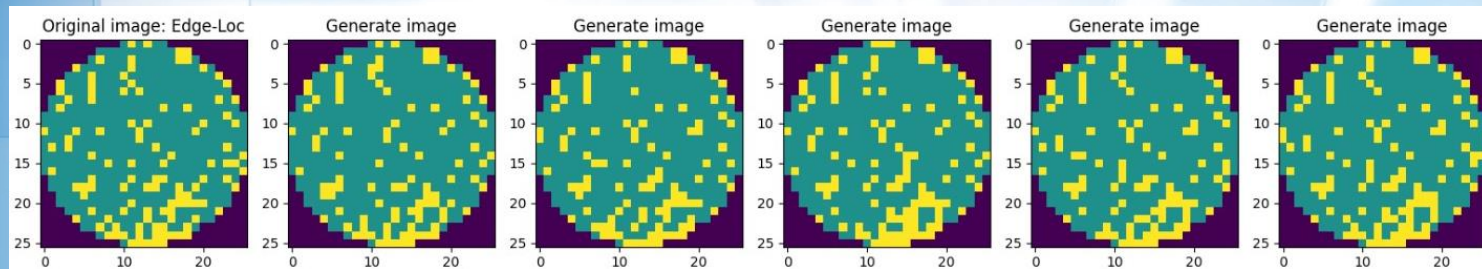
Class 0:



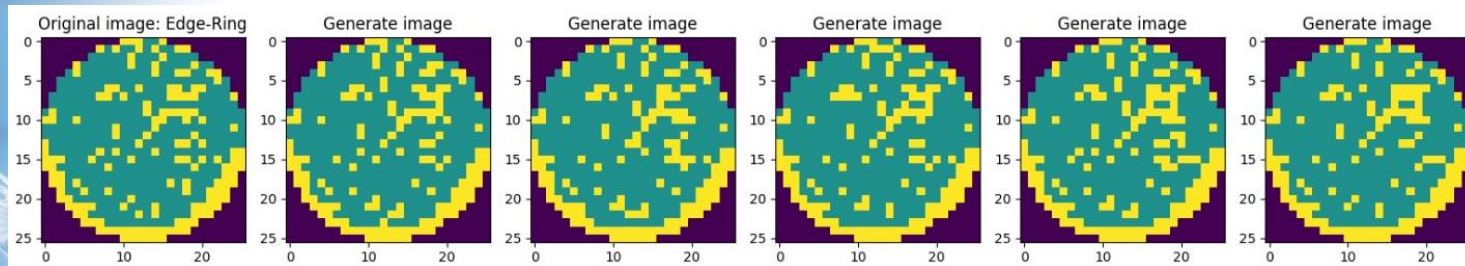
Class 1:



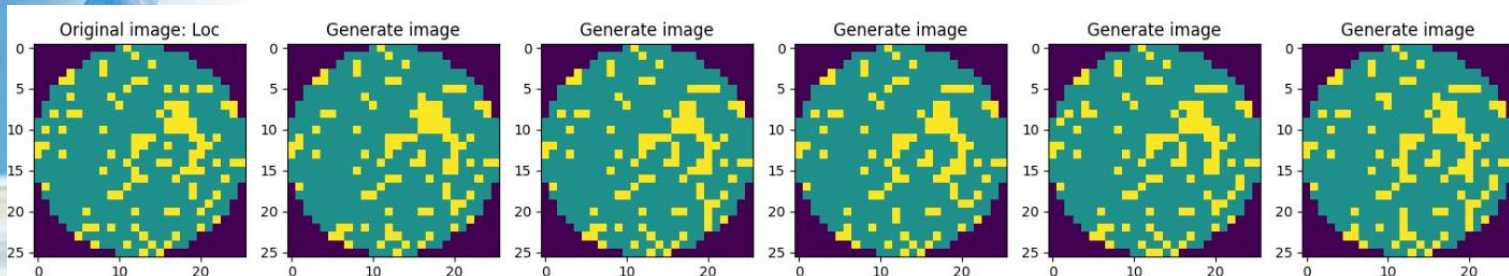
Class 2:



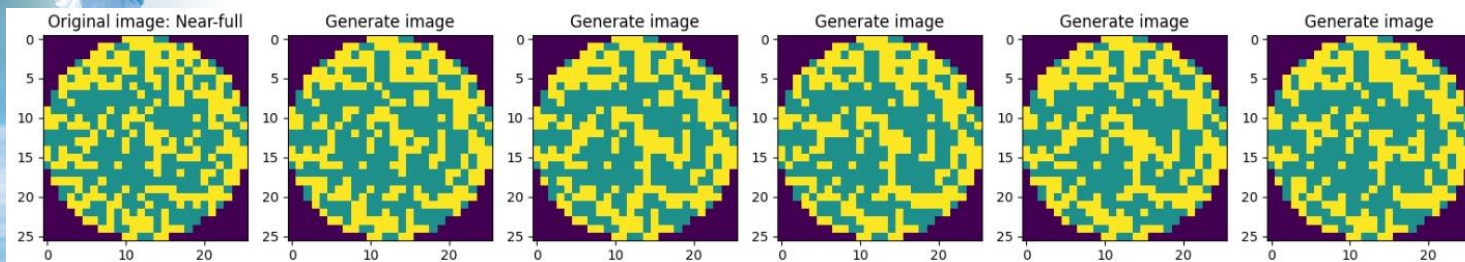
Class 3:



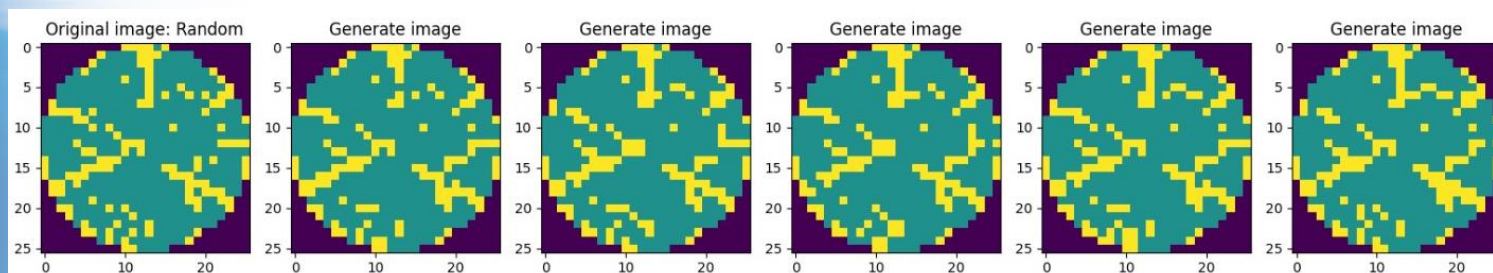
Class 4:



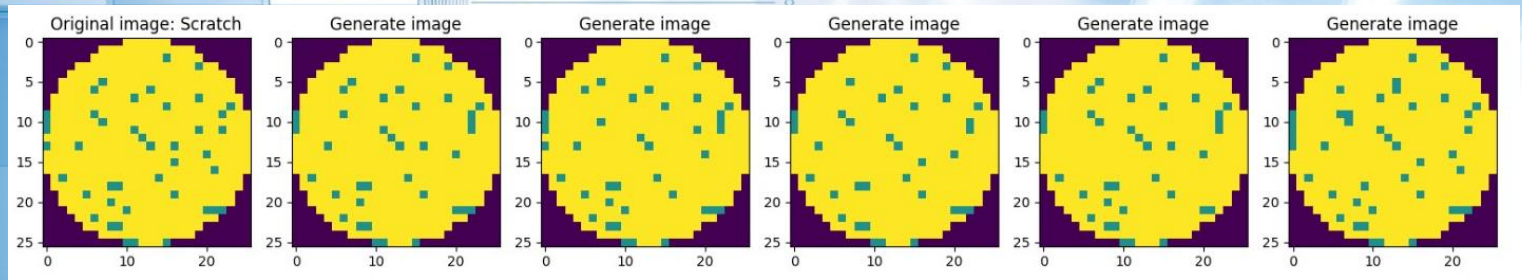
Class 5:



Class 6:



Class 7:



Class 8:

