name	kernel size	stride	pad	output size
input	-	-	-	$80 \times 80 \times 1$
DCAE				
conv1-1	3×3	1	1	$80 \times 80 \times 16$
conv1-2	3×3	1	1	$80 \times 80 \times 16$
pool1	2×2	2	0	$40 \times 40 \times 16$
conv2-1	3×3	1	1	$40 \times 40 \times 32$
conv2-2	3×3	1	1	$40 \times 40 \times 32$
pool2	2×2	2	0	$20 \times 20 \times 32$
conv3-1	3×3	1	1	$20 \times 20 \times 64$
conv3-2	3×3	1	1	$20 \times 20 \times 64$
pool1	2×2	2	0	$10 \times 10 \times 64$
conv4-1	3×3	1	1	$10 \times 10 \times 128$
conv4-2	3×3	1	1	$10 \times 10 \times 128$
pool4	2×2	2	0	$5 \times 5 \times 128$
conv5	5×5	1	0	$1 \times 1 \times 512$
fc6	1×1	1	0	$1 \times 1 \times 512$
deconv5	5×5	1	0	$5 \times 5 \times 128$
unpool4	2×2	2	0	$10 \times 10 \times 128$
deconv4-1	3×3	1	1	$10 \times 10 \times 128$
deconv4-2	3×3	1	1	$10 \times 10 \times 64$
unpool3	2×2	2	0	$20 \times 20 \times 64$
deconv3-1	3×3	1	1	$20 \times 20 \times 64$
deconv3-2	3×3	1	1	$20 \times 20 \times 32$
unpool2	2×2	2	0	$40 \times 40 \times 32$
deconv2-1	3×3	1	1	$40 \times 40 \times 32$
deconv2-2	3×3	1	1	$40 \times 40 \times 16$
unpool1	2×2	2	0	$80 \times 80 \times 16$
deconv1-1	3×3	1	1	$80 \times 80 \times 16$
deconv1-2	3×3	1	1	$80 \times 80 \times 16$
Image-DCAE				
dconv-rec	1×1	1	0	$80 \times 80 \times 1$
Indices-Net				
conv-reg1	5×5	1	2	$80 \times 80 \times 16$
conv-reg2	5×5	1	2	$80 \times 80 \times 16$
conv-reg3	80×80	1	0	$1 \times 1 \times 8$