3D Inception-Resnet modified

The main structure of our 3D model is based on the 2D Inception-Resnet v2 paper[1] and code[2].

conv_bn: convolution + batch norm
add: element-wise addition
gap: global average pool
tile: tiling the tensor in x, y, z directions to return to original shape

block name	Layer type	filters	kernel	stride	dilation	activation	name
	input						
stem	conv bn	32	3	2	1	relu	
	conv bn	32	3	1	1	relu	
	conv bn	64	3	1	1	relu	
	max pool	64	3	2			
	conv bn	80	1	1	1	relu	
	conv bn	192	3	1	1	relu	
	max pool	192	3	2			
Reduction A	conv bn	96	1	1	1	relu	branch 0
	conv bn	48	1	1	1	relu	branch 1
	conv bn	64	5	1	1	relu	branch 1
	conv bn	64	1	1	1	relu	branch 2
	conv bn	96	3	1	1	relu	branch 2
	conv bn	96	3	1	1	relu	branch 2
	average pool	192	3	1			pool branch
	conv bn	64					pool branch
	concat	320					
Inseption Resnet A	conv bn	32	1	1	1	relu	branch 0
	conv bn	32	1	1	1	relu	branch 1
	conv bn	32	3	1	1	relu	branch 1
	conv bn	32	1	1	1	relu	branch 2
	conv bn	48	3	1	1	relu	branch 2
	conv bn	64	3	1	1	relu	branch 2
	gap(input)	320					branch 3
	tile(branch 3)	320					branch 3
	concat						
	conv bn	320	1	1	1	relu	mixed

	add relu	input + 0.17*merged					
Reduction B	conv bn conv bn conv bn conv bn max pool concat	256 128 128 256 320 832	3 1 3 3 3	1 1 1 1	2 2 2 2	relu relu relu relu	branch 0 branch 1 branch 1 branch 1 pool branch
Inseption Resnet B	conv bn conv bn conv bn conv bn conv bn gap(branch 0) tile(branch 2) concat conv bn add relu	64 64 64 64 64 832 832 832 input + 0.1*mixed	1 1 1,5,1 5,1,1 1,1,5 1	1 1 1 1 1 1	2 2 2 2 2 2	relu relu relu relu relu relu	branch 0 branch 1 branch 1 branch 1 branch 1 branch 2 branch 2 mixed
Reduction C	conv bn conv bn conv bn conv bn conv bn conv bn conv bn max pool concat	128 256 128 256 128 256 256 832 1600	1 3 1 3 1 3 3 3	1 1 1 1 1 1 1	2 3 3 3 3 3 3	relu relu relu relu relu relu relu	branch 0 branch 0 branch 1 branch 1 branch 2 branch 2 branch 2 pool branch
Inseption Resnet C	conv bn conv bn conv bn conv bn gap(branch 0) tile(branch 2) concat	64 64 64 64 1600 1600	1 1,3,1 1,1,3 3,1,1	1 1 1 1	3 3 3 3	relu relu relu relu	branch 0 branch 1 branch 1 branch 1 branch 2

	conv bn	1600	1	1	3	relu	mixed
	add	input + 0.2*mixed					
Inseption Resnet C	conv bn	64	1	1	3	relu	branch 0
	conv bn	64	1,3,1	1	3	relu	branch 1
	conv bn	64	1,1,3	1	3	relu	branch 1
	conv bn	64	3,1,1	1	3	relu	branch 1
	gap(branch 0)	1600					branch 2
	tile(branch 2)	1600					
	concat						
	conv bn	1600	1	1	3	relu	mixed
	add	input + 1*mixed					
upsample	conv	64	1	1	1		branch 0
	deconv	64	2	2			branch 0
	conv(c2)	64	1				branch 1
	add(branch 0 branch 1)						
	deconv	64	2	2			branch 0
	conv(c1)	64	1				branch 1
	add(branch 0 branch 1)						
	deconv	64	2	2			branch 0
	conv(c1)	classes	1				branch 0

[1] Inception Resnet paper

[2] Inception Resnet v2 code