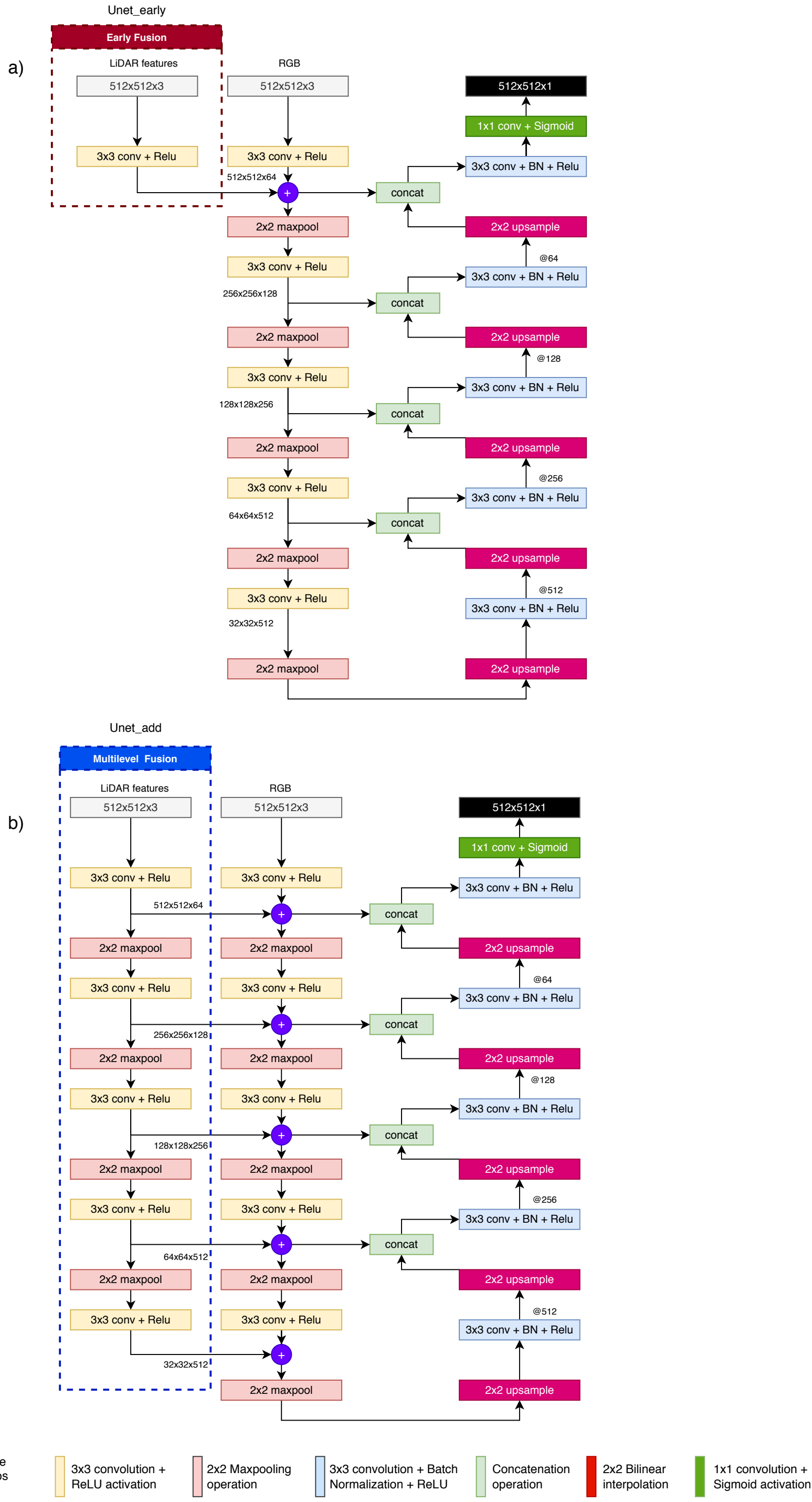
Unet_early
Early Fusion
a)
LiDAR features
RGB
512x512x3
512x512x3
3x3 conv + Relu
3x3 conv + Relu
512x512x64
2x2 maxpool
3x3 conv + Relu
256x256x128
2x2 maxpool
3x3 conv + Relu
128x128x256
2x2 maxpool
3x3 conv + Relu
64x64x512
2x2 maxpool
3x3 conv + Relu
32x32x512
2x2 maxpool
concat
concat
concat
concat
512x512x1
1x1 conv + Sigmoid
3x3 conv + BN + Relu
2x2 upsample
@64
3x3 conv + BN + Relu
2x2 upsample
@128
3x3 conv + BN + Relu
2x2 upsample
@256
3x3 conv + BN + Relu
2x2 upsample
@512
3x3 conv + BN + Relu
2x2 upsample
Unet_add
Multilevel Fusion
b)
LiDAR features
RGB
512x512x3
512x512x3
3x3 conv + Relu
3x3 conv + Relu
512x512x64
2x2 maxpool
2x2 maxpool
3x3 conv + Relu
3x3 conv + Relu
256x256x128
2x2 maxpool
2x2 maxpool
3x3 conv + Relu
3x3 conv + Relu
128x128x256
2x2 maxpool
2x2 maxpool
3x3 conv + Relu
3x3 conv + Relu
64x64x512
2x2 maxpool
2x2 maxpool
3x3 conv + Relu
3x3 conv + Relu
32x32x512
2x2 maxpool
concat
concat
concat
concat
512x512x1
1x1 conv + Sigmoid
3x3 conv + BN + Relu
2x2 upsample
@64
3x3 conv + BN + Relu
2x2 upsample
@128
3x3 conv + BN + Relu
2x2 upsample
@256
3x3 conv + BN + Relu
2x2 upsample
@512
3x3 conv + BN + Relu
2x2 upsample
Elementwise feature maps addition
3x3 convolution + ReLU activation
2x2 Maxpooling operation
3x3 convolution + Batch Normalization + ReLU
Concatenation operation
2x2 Bilinear interpolation
1x1 convolution + Sigmoid activation