

COPPE

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1 Definition

A postprocessing layer is a function that:

- is one of the following:
 - a normalization function (e.g. batchnorm)
 - an activation function (e.g. relu)
 - dropout function
- does not change the “type” (shape, data type, etc) of the input tensor

A subnetwork $M \in N$ is a connected segmentation of a network N .

Definition 1 (valid network). *A generated network N is valid if and only if the following hold:*

- *The ranks of sequentially connected tensors in the network are not increasing (\rightarrow conv2d (rank 3) cannot be followed by a dense layer (rank 1)).*
- *Let M be an arbitrary subnetwork of N . $\forall M \in N$ with only postprocessing layers, there only exists one layer per type.*
- *All the connections have matching dimensions (\rightarrow this can be fixed by adding upsampling/downsampling/reshape/concatenate layers).*