COPPE

July 20, 2020

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

Definition 1 (valid nework)**.** *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 ($\rightarrow$ a dense layer (rank 1) cannot be followed by a conv2d (rank 3) layer).*
- *Let M be an arbitrary subgraph of N. $\forall M \subseteq N$ with only postprocessing layers, there only exists one layer per type.*
- *Any connected vertices have matching dimensions ($\rightarrow$ this can be fixed by adding upsampling/downsampling/reshape/concatenate layers).*

Functions

- recipe: [layers] $\rightarrow$ node
- layer: [hyperparams] $\rightarrow$ node
- hyperparam: string $\rightarrow$ some types (int, float, list of ints, strings, etc)