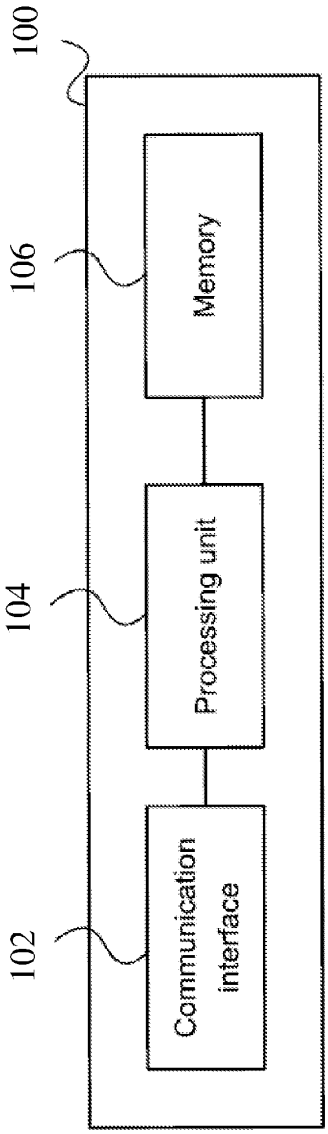

100
106
Memory
104
Processing unit
102
Communication interface

FIG. 1A

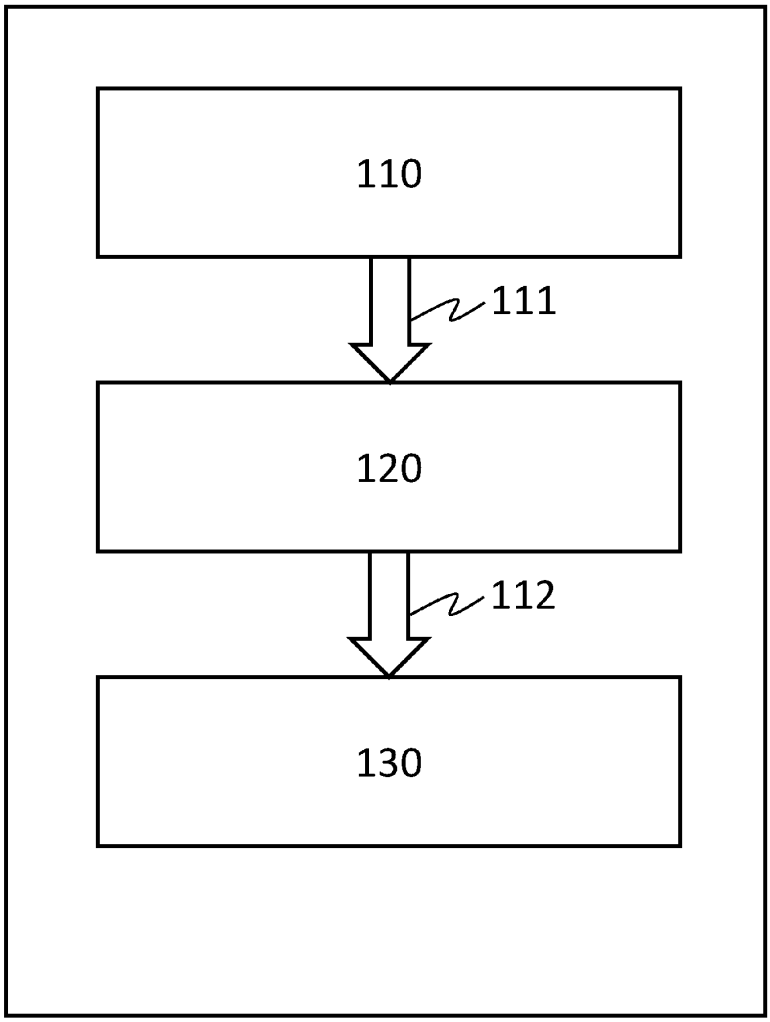


FIG. 1B

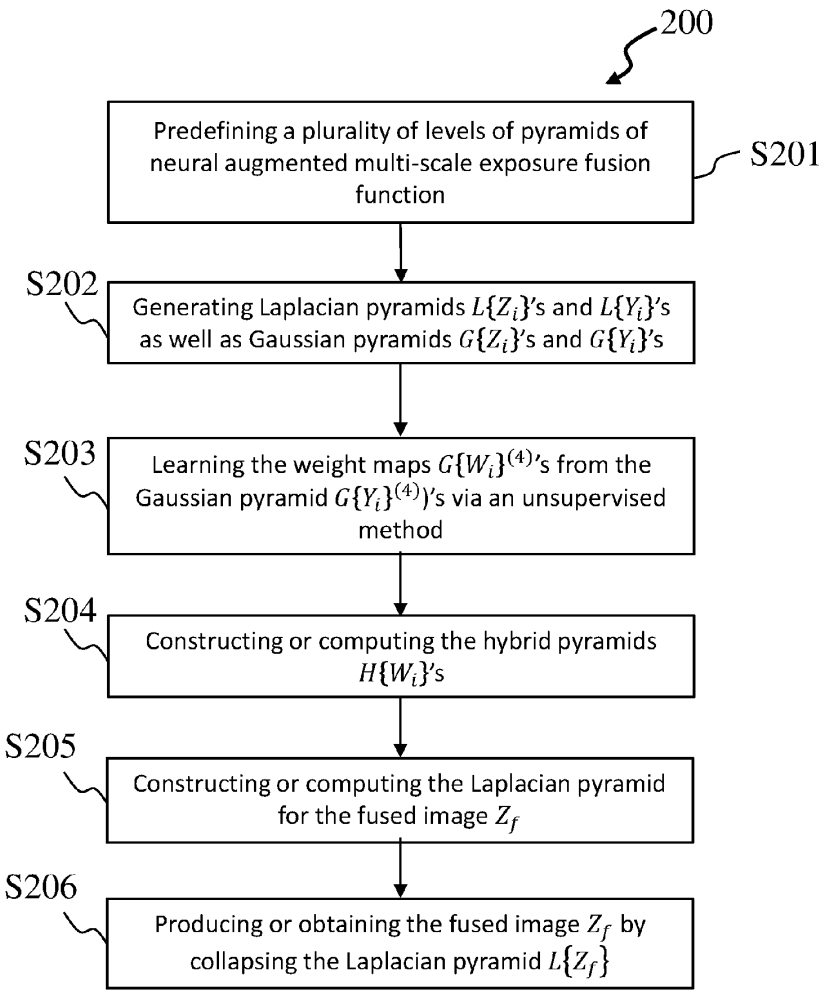

200
Predefining a plurality of levels of pyramids of neural augmented multi-scale exposure fusion function
S201
S202
Generating Laplacian pyramids $L\{Z_i\}$'s and $L\{Y_i\}$'s as well as Gaussian pyramids $G\{Z_i\}$'s and $G\{Y_i\}$'s
S203
Learning the weight maps $G\{W_i\}^{(4)}$'s from the Gaussian pyramid $G\{Y_i\}^{(4)}$)'s via an unsupervised method
S204
Constructing or computing the hybrid pyramids $H\{W_i\}$'s
S205
Constructing or computing the Laplacian pyramid for the fused image Z_f
S206
Producing or obtaining the fused image Z_f by collapsing the Laplacian pyramid $L\{Z_f\}$

FIG. 2

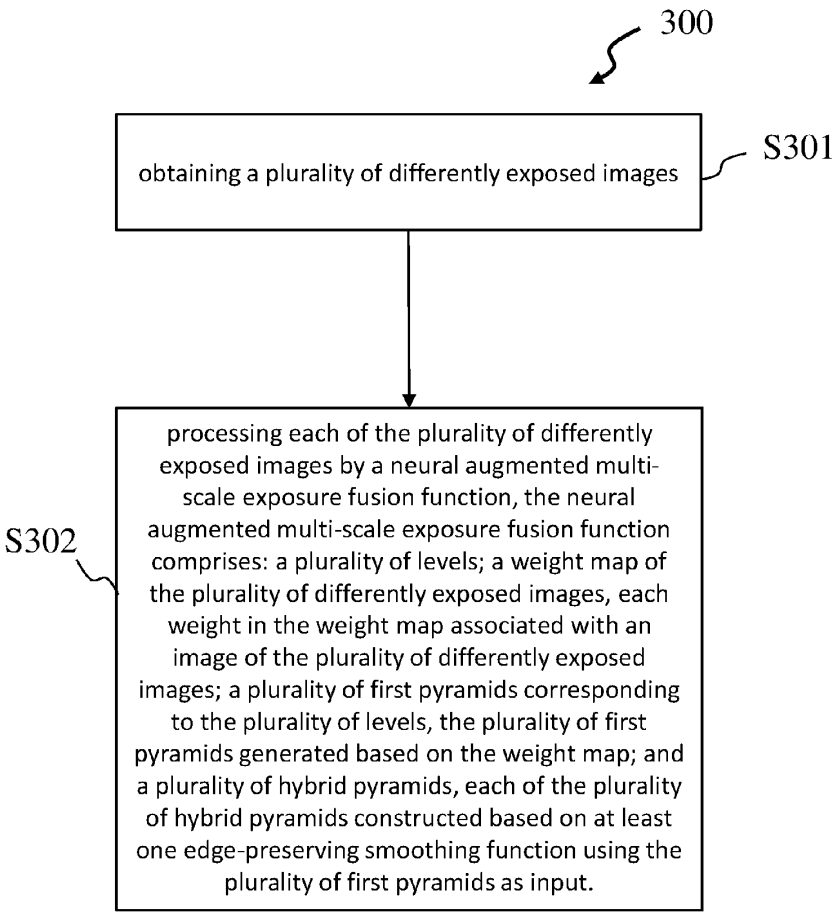

300
obtaining a plurality of differently exposed images
S301
processing each of the plurality of differently exposed images by a neural augmented multi-scale exposure fusion function, the neural augmented multi-scale exposure fusion function comprises: a plurality of levels; a weight map of the plurality of differently exposed images, each weight in the weight map associated with an image of the plurality of differently exposed images; a plurality of first pyramids corresponding to the plurality of levels, the plurality of first pyramids generated based on the weight map; and a plurality of hybrid pyramids, each of the plurality of hybrid pyramids constructed based on at least one edge-preserving smoothing function using the plurality of first pyramids as input.
S302

FIG. 3