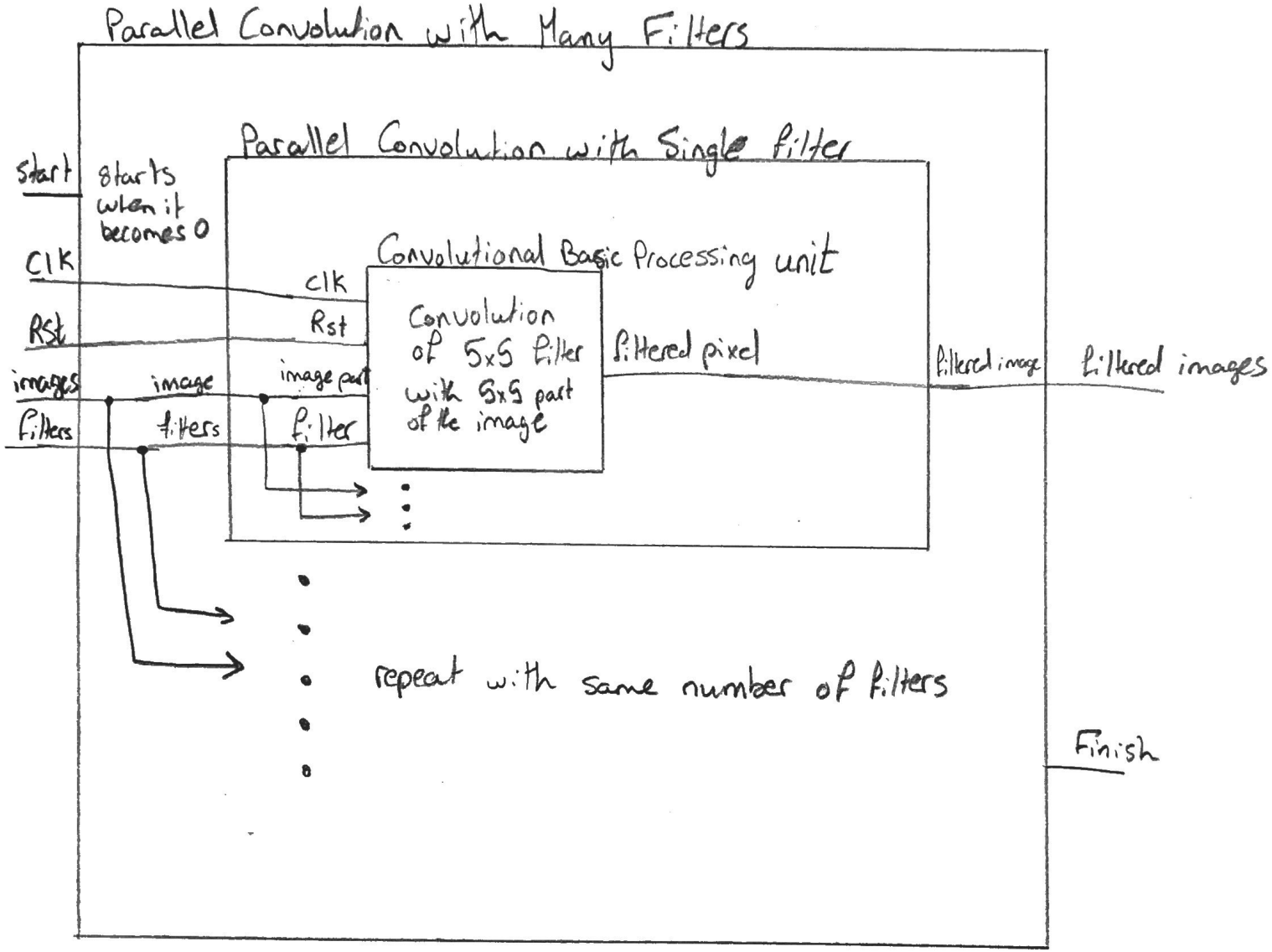
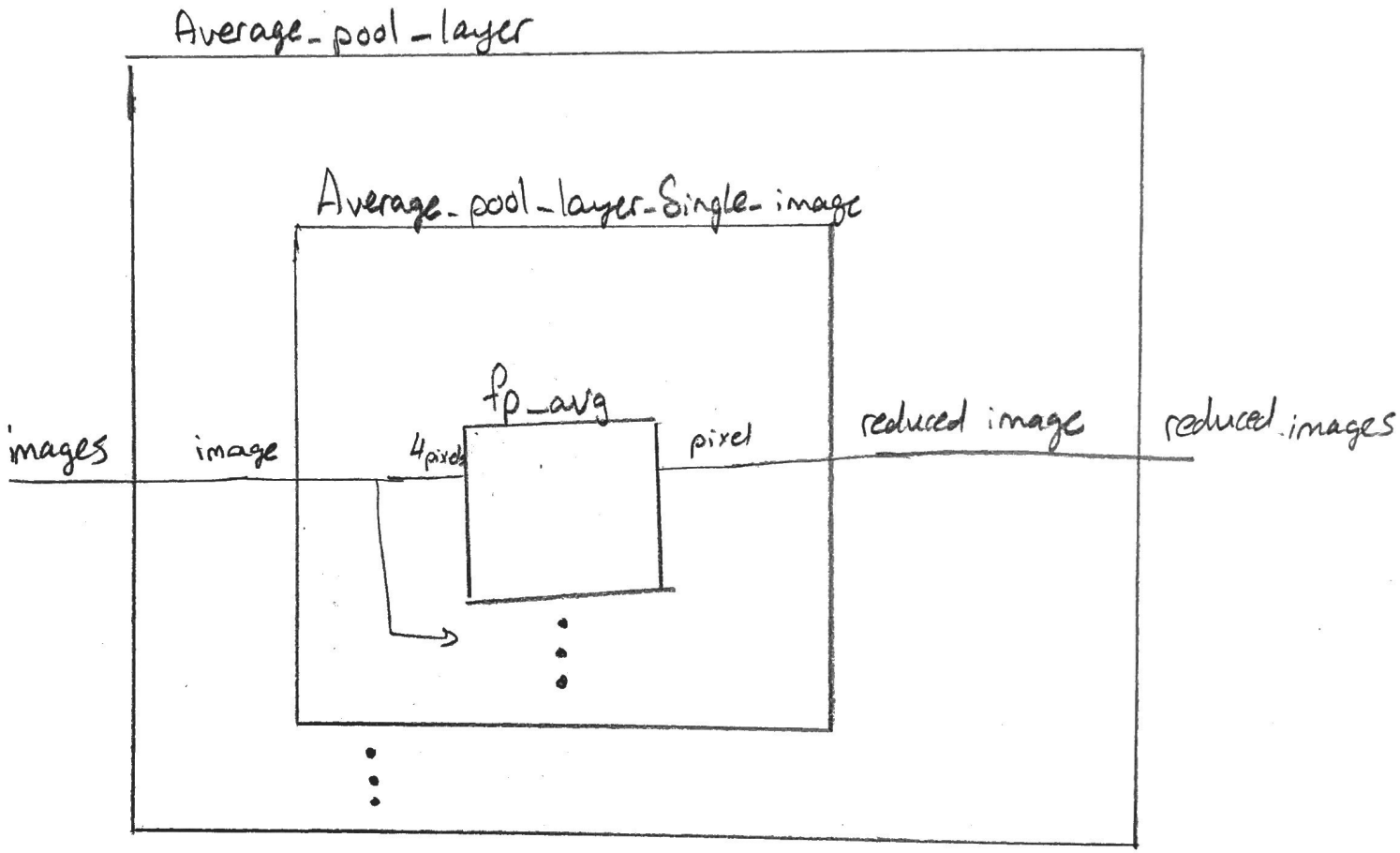
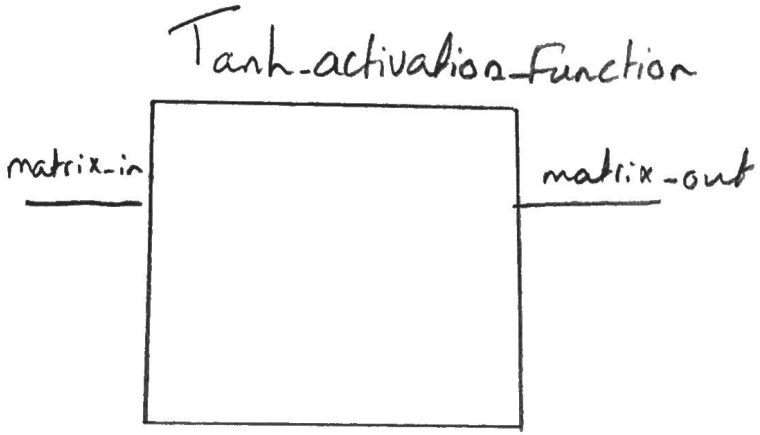
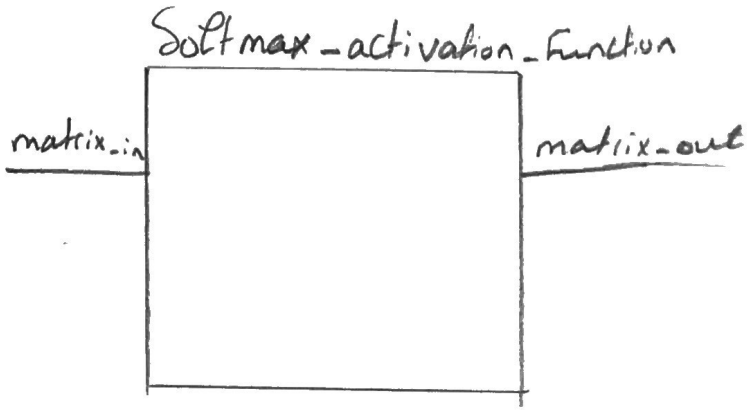
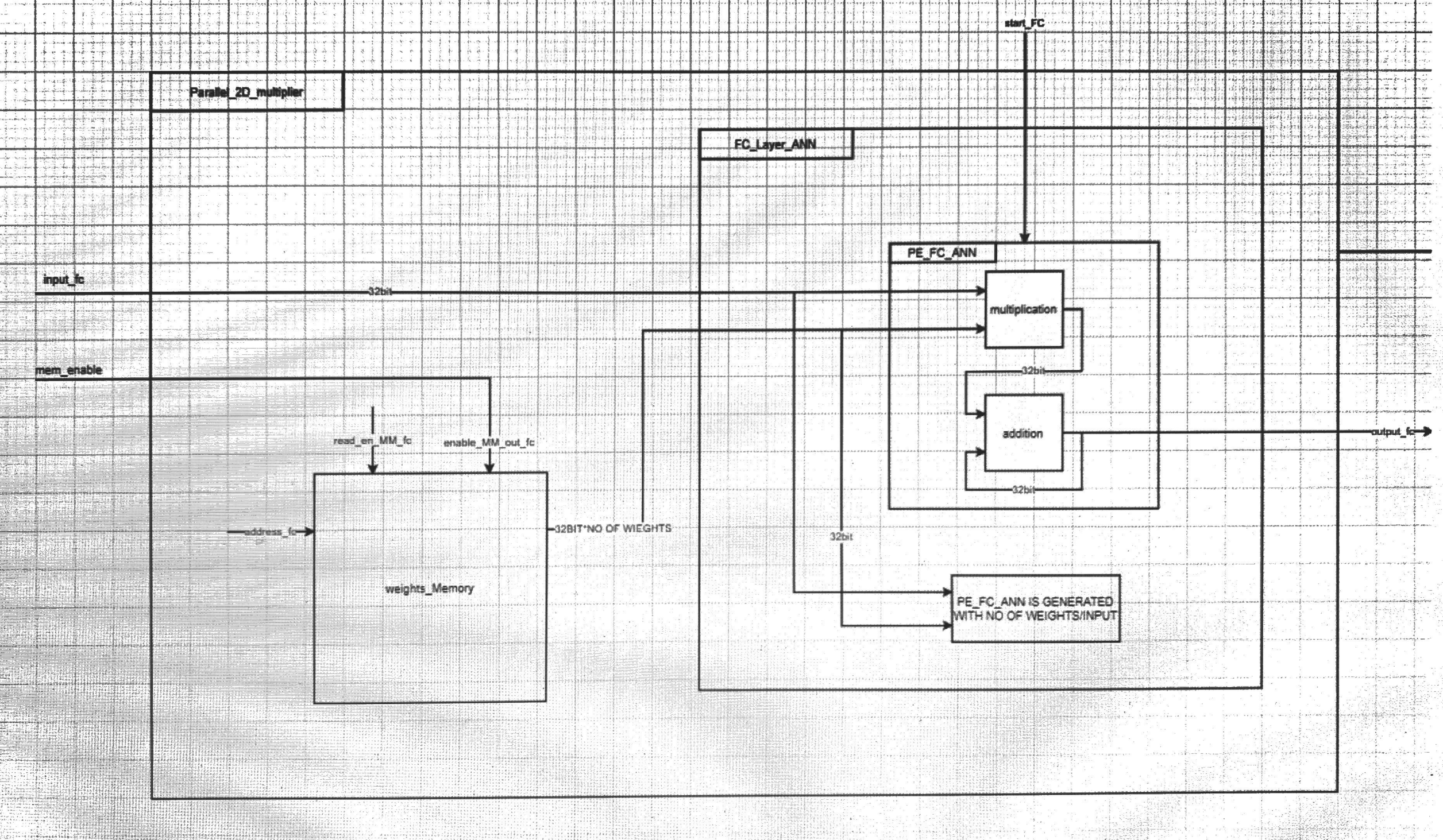

Parallel Convolution with Many Filters
Parallel Convolution with Single filter
start
starts when it becomes 0
clk
Rst
images
image
image part
filters
filter
Convolutional Basic Processing unit
clk
Rst
Convolution of 5x5 filter with 5x5 part of the image
filtered pixel
filtered image
filtered images
repeat with same number of filters
Finish

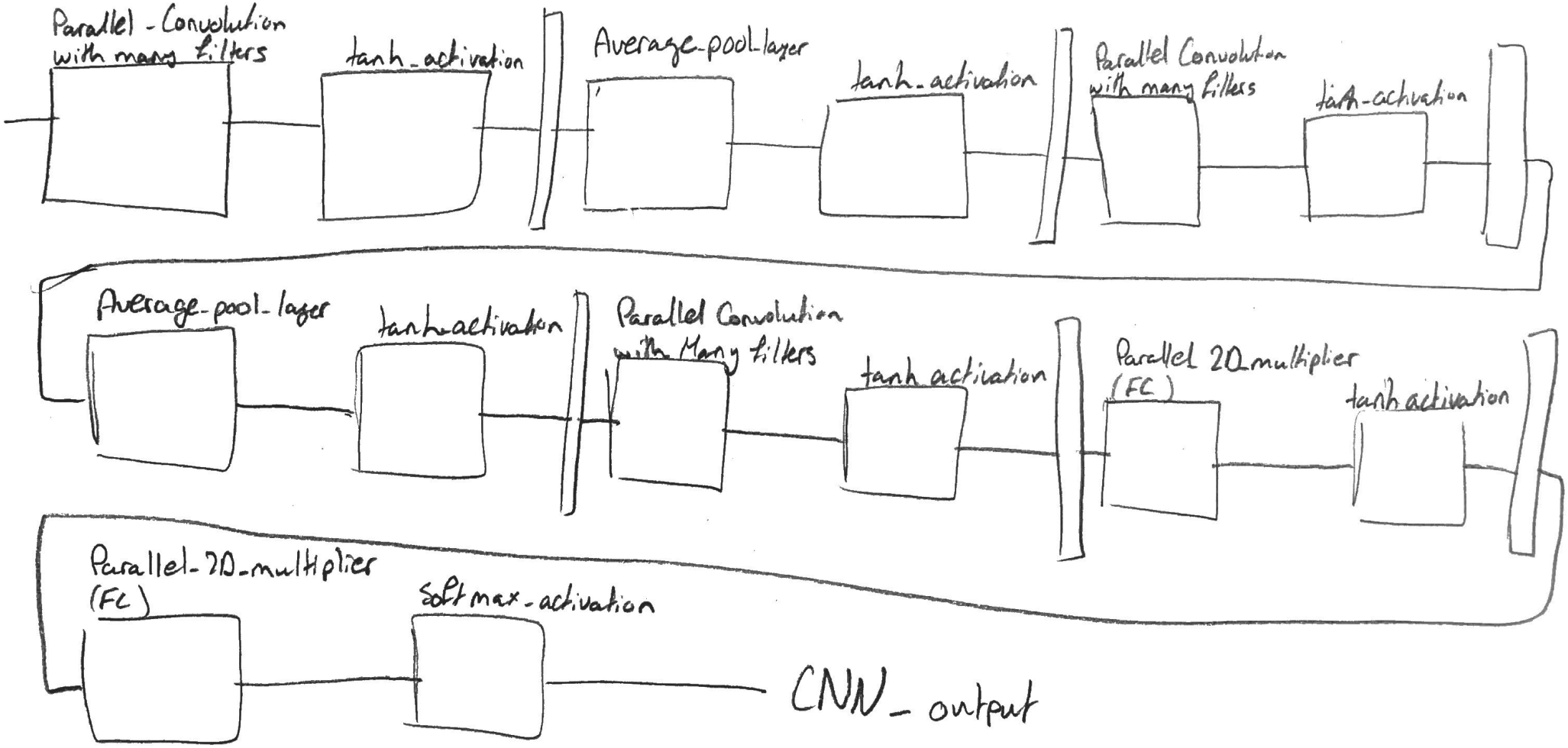

Average_pool_layer
Average_pool_layer_Single_image
fp_avg
images
image
4pixels
pixel
reduced image
reduced_images


Tanh_activation_Function
matrix_in
matrix_out


Softmax_activation_Function
matrix_in
matrix_out


start_FC
Parallel_2D_multiplier
FC_Layer_ANN
PE_FC_ANN
input_fc
32bit
multiplication
32bit
mem_enable
addition
output_fc
32bit
read_en_MM_fc
enable_MM_out_fc
address_fc
32BIT*NO OF WIEGHTS
weights_Memory
32bit
PE_FC_ANN IS GENERATED
WITH NO OF WEIGHTS/INPUT

CNN_Main


Parallel - Convolution with many filters
tanh_activation
Average_pool_layer
tanh_activation
Parallel Convolution with many filters
tanh_activation
Average_pool_layer
tanh_activation
Parallel Convolution with Many filters
tanh activation
Parallel 2D_multiplier (FC)
tanh activation
Parallel_2D_multiplier (FC)
soft max_activation
CNN_output