



North South University

Department of Electrical and Computer Engineering

EEE660/CSE553/CSE468 - Computer Vision

Midterm - Summer 2021

Submission deadline: 11:59PM 17/08/2021 (Via Google Classroom)

Name:	
Student ID:	
Course:	
Date:	

Question 1: (10 marks)

Consider a convolutional network with the following configuration. Calculate (show the calculation) the number of trainable parameters per layer and in total

Layer #	Type	Details	Number of parameters
1	Input Layer	50 x 50 CMYK Image	
2	Normalisation layer	Input - its mean (channel wise)	
3	Convolutional	Concatenation of the response of: 3, 3x3 filters 4, 5x5 filters 20, 1x1 filters (Determine appropriate padding for other techniques to match the row-col of the 5x5 filters)	
4	Activation	RelU activation	
5	Convolutional	Concatenation of the response of: 3, 3x3 filters 4, 5x5 filters 20, 1x1 filters, stride of 2 (Determine appropriate padding or other techniques to match the row-col of the 1x1 output)	
6	Activation	RelU activation	
7	Maxpooling	2x2 region, stride of 1	
8	Activation	RelU activation	
9	Flattening		
10	Fully connected	37 neurons, Activation - Softmax	
Total number of parameters			

Question 3: (10 marks)

Change the network detailed in Question 1 to still do an extra classification task in addition to the current one.

Your network must now make an extra prediction over 5 classes as a separate probability distribution. The two distributions must be predicted using a single forward pass.

You are only allowed to modify/add after the 8th layer.

Write your answer in a tabular form.