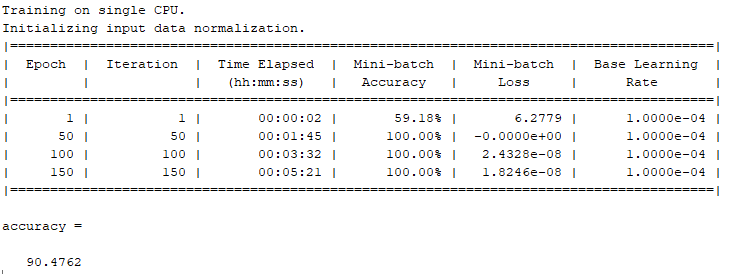
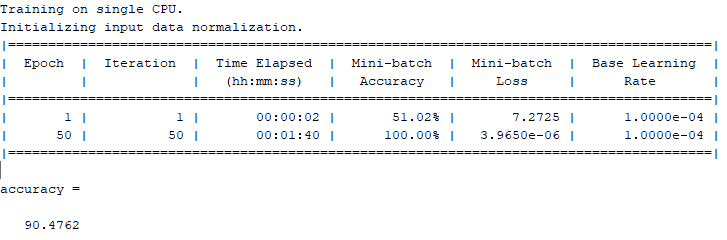
**THAY ĐỔI KÍCH THƯỚC KERNEL**

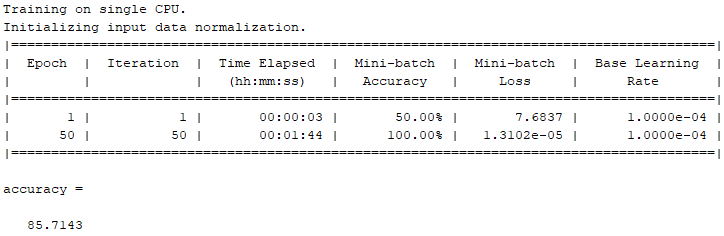
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([102 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



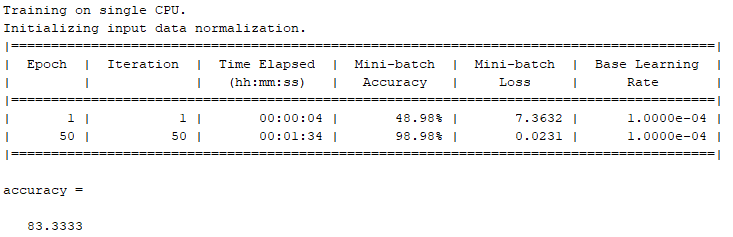
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**105** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



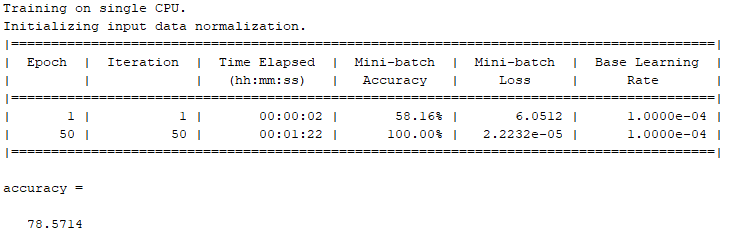
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**110** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**100** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |

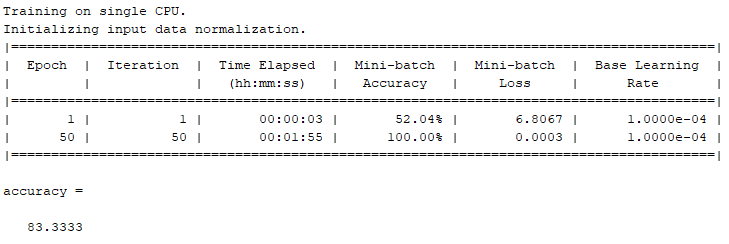


|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**90** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |

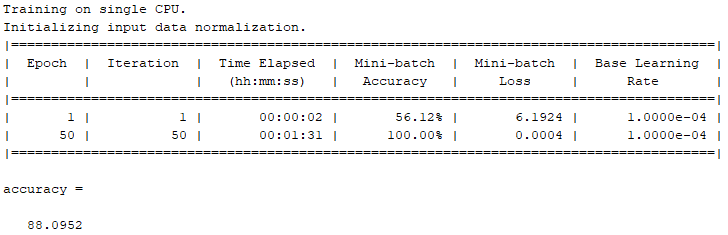


**THAY ĐỔI SỐ LƯỢNG KERNEL**

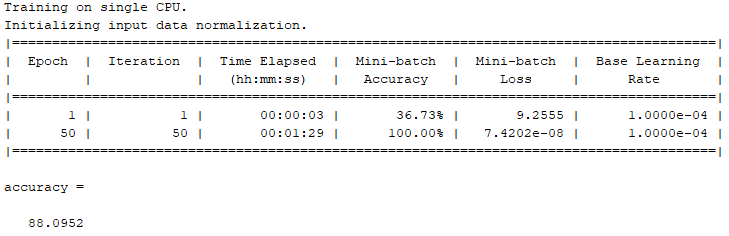
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([102 1],**2**,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',**2**)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



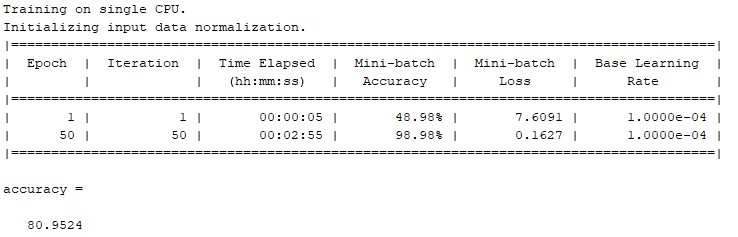
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([102 1],1,'stride',**1**)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',**1**)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |

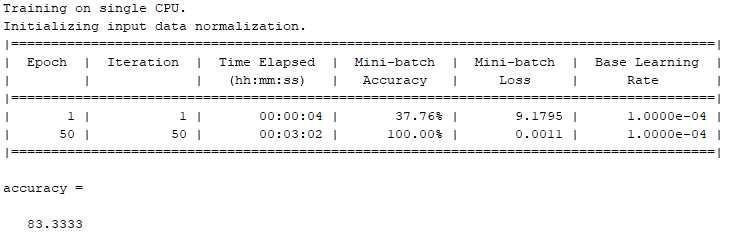


|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([102 1],**4**,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',**4**)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



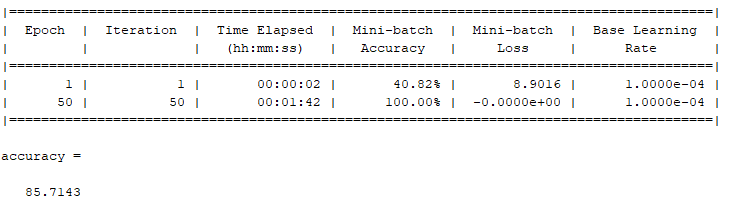
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([200 1],**13**,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([24 1],10,'numChannels',**13**)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([11 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([9 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



Lần 2  


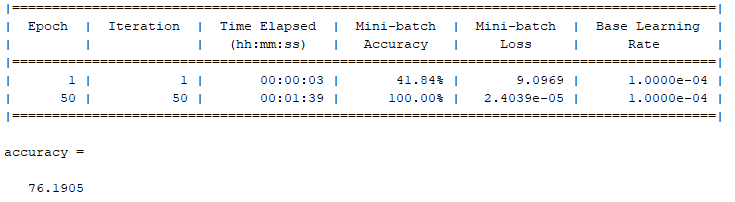
**THAY ĐỔI KÍCH THƯỚC KERNEL CỦA NHIỀU LỚP**

|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**102** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**26** 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**13** 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**11** 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



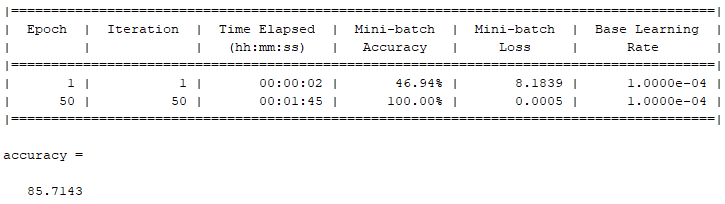
Nhận xét: Accuracyuracy thấp hơn so với cấu hình gốc

|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**102** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**28** 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**15** 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**13** 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



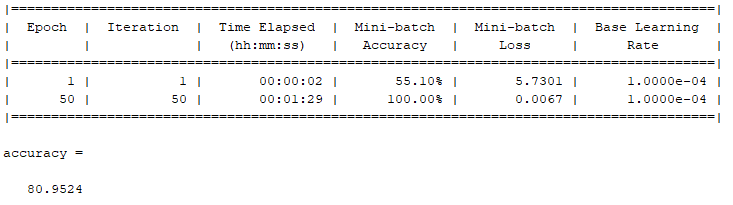
Nhận xét: Accuracyuracy thấp hơn so với cấu hình gốc

|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([105 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([30 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([17 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([15 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |

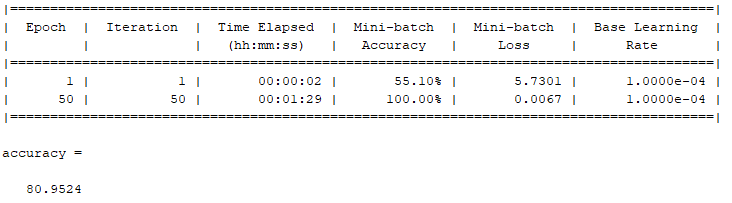


Nhận xét: Accuracyuracy thấp hơn so với cấu hình gốc

|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([**98** 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**20** 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**7** 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([**5** 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



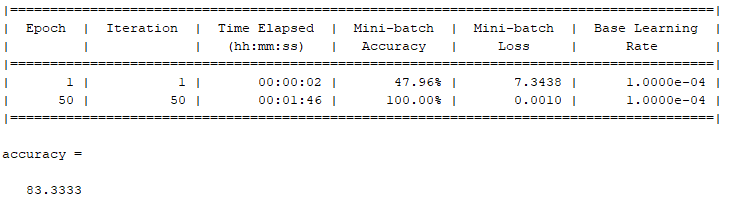
|  |
| --- |
| convnet = [imageInputLayer([7400 1])  convolution2dLayer([98 1],3,'stride',1)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([20 1],10,'numChannels',3)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([7 1],10,'stride',1,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  convolution2dLayer([5 1],10,'numChannels',10)  maxPooling2dLayer([2 1],'stride',2)  fullyConnectedLayer(30)  fullyConnectedLayer(10)  fullyConnectedLayer(2)  softmaxLayer  classificationLayer]; |



Nhận xét: Accuracyuracy thấp hơn so với cấu hình gốc

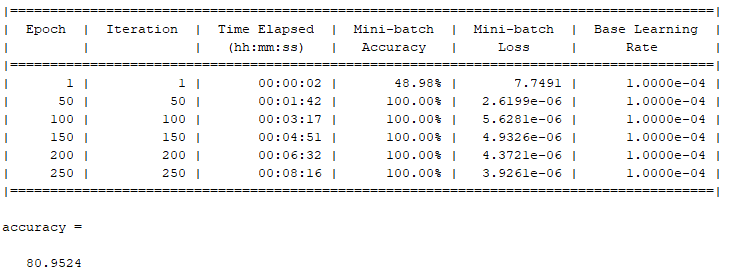
**KIỂM TRA ACCURACYURACY SAU KHI QUA BỘ LỌC STRAVITZKY GOLAY**

|  |
| --- |
| %% Load data  clear ; clc;  load('Dx.mat');  Dx=Dx';  for i = 1:98  Dy\_Sgolay(:,i) = sgolayfilt(Dy(:,i),1,101);  end  Dx=Dx'; |



Nhận xét: Accuracyuracy thấp hơn so với tín hiệu gốc

|  |
| --- |
| clear ; clc;  load('Dx.mat');  Dx=Dx';  for i = 1:98  Dx\_Sgolay(:,i) = sgolayfilt(Dx(:,i),1,11);  end  Dx\_Sgolay = Dx\_Sgolay'; |



epoch = 200 accuracy = 80.9524

epoch = 300 accuracy = 88.0952

epoch = 400 accuracy = 92.9524

epoch = 500 accuracy = 76.1905

epoch = 600 accuracy = 90.4762

epoch = 700 accuracy = 78.5714

epoch = 800 accuracy = 76.1905

epoch = 900 accuracy = 80.9524

epoch = 1000 accuracy = 78.5714