

SUMEET SHANBHAG

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Deep Learning Homework 4 Report

```
if __name__ == "__main__": ...  
... val_acc = 85.94166666666668  
    best_val_fce = 0.4007608794260196  
    val_acc = 87.74166666666666  
    best_val_fce = 0.34973933458350176  
    val_acc = 88.26666666666667  
    best_val_fce = 0.3294587569596319  
    val_acc = 89.55833333333332  
    best_val_fce = 0.2969524581544438  
    val_acc = 90.575  
    best_val_fce = 0.26269075800351144  
    val_acc = 91.2  
    best_val_fce = 0.24912963660017484  
    val_acc = 91.475  
    best_val_fce = 0.2436306793856428  
    val_acc = 91.425  
    best_val_fce = 0.2424932890005306  
    val_acc = 91.5  
    best_val_fce = 0.24210450783094714  
    val_acc = 91.58333333333334  
    best_val_fce = 0.2413819408011466
```

```
---check grad---  
2.6804048777418382e-06  
---approx prime---  
[0.      0.      0.      ... 0.10306546 0.09798038 0.0972842 ]  
val_acc = 88.08333333333334  
best_val_fce = 0.4420356201474237
```

```
The best hyper parameters are:  
val fce = 0.23108988993636528  
alpha = 0.0001  
hidden_layer = 3  
hidden_unit = 50  
num_epochs = 50  
batch_size = 16  
learning_rate = 0.005  
Regularized ce for Testing data = 0.37157417530222964  
Test accuracy = 88.11  
Best hidden unit = 50  
Accuracy for Testing data = (array([ 0.00283449,  0.01390175,  0.00564252, ...,  0.05442645,  
    -0.27902733, -0.28205705]), 87.71)
```

