



epoch 5-9

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epoch 5 Training avg loss 0.03141839212367705
epoch 5 Testing avg loss 0.029795064952882137
{'mcc': 0.9759914726591402, 'acc': 0.9867549668874173, 'f1': 0.9836552150294913}
[[ 62  0  2]
 [  0 272  3]
 [  0  1 113]]
-----
epoch 6 Training avg loss 0.01157138395543202
epoch 6 Testing avg loss 0.02736470064765104
{'mcc': 0.9839347332316949, 'acc': 0.9911699779249448, 'f1': 0.9897567330099418}
[[ 63  0  1]
 [  0 273  2]
 [  0  1 113]]
-----
epoch 7 Training avg loss 0.003938523178616547
epoch 7 Testing avg loss 0.02526975452584386
{'mcc': 0.9879461727684214, 'acc': 0.9933774834437086, 'f1': 0.9938116941481535}
[[ 64  0  0]
 [  0 273  2]
 [  0  1 113]]
-----
epoch 8 Training avg loss 0.014002066046114404
epoch 8 Testing avg loss 0.018352992398656186
{'mcc': 0.9919460939444583, 'acc': 0.9955849889624724, 'f1': 0.9958639021796917}
[[ 64  0  0]
 [  0 274  1]
 [  0  1 113]]
-----
epoch 9 Training avg loss 0.0061849252129022834
epoch 9 Testing avg loss 0.036635434256280415
{'mcc': 0.9799628847788407, 'acc': 0.9889624724061811, 'f1': 0.9877049102690466}
[[ 64  0  0]
 [  0 272  3]
 [  1  1 112]]
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epoch 10-14

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100%|██████████████████████████████████████████████████████████████████████████████| 227/227
epoch 10 Training avg loss 0.005491954642119776
epoch 10 Testing avg loss 0.037115197001217064
{'mcc': 0.9839769614769734, 'acc': 0.9911699779249448, 'f1': 0.9917698085263936}
[[ 64   0   0]
 [  0 272   3]
 [  0   1 113]]

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100%|██████████████████████████████████████████████████████████████████████████████| 227/227
epoch 11 Training avg loss 0.0029894105476837005
epoch 11 Testing avg loss 0.038918282288553506
{'mcc': 0.9800380166960337, 'acc': 0.9889624724061811, 'f1': 0.989738070176827}
[[ 64   0   0]
 [  0 271   4]
 [  0   1 113]]

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100%|██████████████████████████████████████████████████████████████████████████████| 227/227
epoch 12 Training avg loss 0.0011957362749986146
epoch 12 Testing avg loss 0.03603730785273416
{'mcc': 0.9800380166960337, 'acc': 0.9889624724061811, 'f1': 0.989738070176827}
[[ 64   0   0]
 [  0 271   4]
 [  0   1 113]]

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100%|██████████████████████████████████████████████████████████████████████████████| 227/227
epoch 13 Training avg loss 0.0018611310307851414
epoch 13 Testing avg loss 0.03572434138990693
{'mcc': 0.9839769614769734, 'acc': 0.9911699779249448, 'f1': 0.9917698085263936}
[[ 64   0   0]
 [  0 272   3]
 [  0   1 113]]

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100%|██████████████████████████████████████████████████████████████████████████████| 227/227
epoch 14 Training avg loss 0.0021369982799792062
epoch 14 Testing avg loss 0.044388316866197305
{'mcc': 0.9839347332316949, 'acc': 0.9911699779249448, 'f1': 0.9897567330099418}
[[ 63   0   1]
 [  0 273   2]
 [  0   1 113]]

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epoch 15-19

```
epoch 0 Training avg loss 0.811010915736795  
epoch 0 Testing avg loss 0.36834318648304853  
{'mcc': 0.6818864236601224, 'acc': 0.8211920529801324, 'f1': 0.5610326994616229}  
[[ 0  2  62]  
 [ 0 272  3]  
 [ 0  14 100]]  
-----  
100%|██████████████████████████████████████████████████████████████████████████████| 227/227  
epoch 1 Training avg loss 0.1729569033276503  
epoch 1 Testing avg loss 0.06502390571608486  
{'mcc': 0.9682506907859931, 'acc': 0.9823399558498896, 'f1': 0.9793894144740781}  
[[ 64  0  0]  
 [  2 269  4]  
 [  1  1 112]]  
-----  
100%|██████████████████████████████████████████████████████████████████████████████| 227/227  
epoch 2 Training avg loss 0.061389638325363594  
epoch 2 Testing avg loss 0.039983839030467434  
{'mcc': 0.967862141154437, 'acc': 0.9823399558498896, 'f1': 0.9803578328168493}  
[[ 62  1  1]  
 [  0 271  4]  
 [  0  2 112]]  
-----  
100%|██████████████████████████████████████████████████████████████████████████████| 227/227  
epoch 3 Training avg loss 0.03524651109714816  
epoch 3 Testing avg loss 0.029680835436457734  
{'mcc': 0.9879226565610321, 'acc': 0.9933774834437086, 'f1': 0.9917963946447941}  
[[ 63  0  1]  
 [  0 274  1]  
 [  0  1 113]]  
-----  
100%|██████████████████████████████████████████████████████████████████████████████| 227/227  
epoch 4 Training avg loss 0.011823704708798373  
epoch 4 Testing avg loss 0.03372830969971817  
{'mcc': 0.9799773421171788, 'acc': 0.9889624724061811, 'f1': 0.9877272308446514}  
[[ 63  0  1]  
 [  0 272  3]  
 [  0  1 113]]  
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