

```
#####  
##  
Generated attack set: ()  
Generated attack set: ('DeepFool',)  
Generated attack set: ('FGSM',)  
Generated attack set: ('PGD',)  
Generated attack set: ('CW',)  
Generated attack set: ('FAB1',)  
Generated attack set: ('FAB2',)  
Generated attack set: ('DeepFool', 'FGSM')  
Generated attack set: ('DeepFool', 'PGD')  
Generated attack set: ('DeepFool', 'CW')  
Generated attack set: ('DeepFool', 'FAB1')  
Generated attack set: ('DeepFool', 'FAB2')  
Generated attack set: ('FGSM', 'PGD')  
Generated attack set: ('FGSM', 'CW')  
Generated attack set: ('FGSM', 'FAB1')  
Generated attack set: ('FGSM', 'FAB2')  
Generated attack set: ('PGD', 'CW')  
Generated attack set: ('PGD', 'FAB1')  
Generated attack set: ('PGD', 'FAB2')  
Generated attack set: ('CW', 'FAB1')  
Generated attack set: ('CW', 'FAB2')  
Generated attack set: ('FAB1', 'FAB2')  
Generated attack set: ('DeepFool', 'FGSM', 'PGD')  
Generated attack set: ('DeepFool', 'FGSM', 'CW')  
Generated attack set: ('DeepFool', 'FGSM', 'FAB1')  
Generated attack set: ('DeepFool', 'FGSM', 'FAB2')  
Generated attack set: ('DeepFool', 'PGD', 'CW')  
Generated attack set: ('DeepFool', 'PGD', 'FAB1')  
Generated attack set: ('DeepFool', 'PGD', 'FAB2')  
Generated attack set: ('DeepFool', 'CW', 'FAB1')  
Generated attack set: ('DeepFool', 'CW', 'FAB2')  
Generated attack set: ('DeepFool', 'FAB1', 'FAB2')  
Generated attack set: ('FGSM', 'PGD', 'CW')  
Generated attack set: ('FGSM', 'PGD', 'FAB1')  
Generated attack set: ('FGSM', 'PGD', 'FAB2')  
Generated attack set: ('FGSM', 'CW', 'FAB1')  
Generated attack set: ('FGSM', 'CW', 'FAB2')  
Generated attack set: ('FGSM', 'FAB1', 'FAB2')  
Generated attack set: ('PGD', 'CW', 'FAB1')  
Generated attack set: ('PGD', 'CW', 'FAB2')  
Generated attack set: ('PGD', 'FAB1', 'FAB2')  
Generated attack set: ('CW', 'FAB1', 'FAB2')  
Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'CW')  
Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'FAB1')  
Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'FAB2')  
Generated attack set: ('DeepFool', 'FGSM', 'CW', 'FAB1')  
Generated attack set: ('DeepFool', 'FGSM', 'CW', 'FAB2')  
Generated attack set: ('DeepFool', 'FGSM', 'FAB1', 'FAB2')  
Generated attack set: ('DeepFool', 'PGD', 'CW', 'FAB1')  
Generated attack set: ('DeepFool', 'PGD', 'CW', 'FAB2')  
Generated attack set: ('DeepFool', 'PGD', 'FAB1', 'FAB2')  
Generated attack set: ('DeepFool', 'CW', 'FAB1', 'FAB2')  
Generated attack set: ('FGSM', 'PGD', 'CW', 'FAB1')  
Generated attack set: ('FGSM', 'PGD', 'CW', 'FAB2')  
Generated attack set: ('FGSM', 'PGD', 'FAB1', 'FAB2')  
Generated attack set: ('FGSM', 'CW', 'FAB1', 'FAB2')  
Generated attack set: ('PGD', 'CW', 'FAB1', 'FAB2')  
Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'CW', 'FAB1')
```

Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'CW', 'FAB2')
Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'FAB1', 'FAB2')
Generated attack set: ('DeepFool', 'FGSM', 'CW', 'FAB1', 'FAB2')
Generated attack set: ('DeepFool', 'PGD', 'CW', 'FAB1', 'FAB2')
Generated attack set: ('FGSM', 'PGD', 'CW', 'FAB1', 'FAB2')
Generated attack set: ('DeepFool', 'FGSM', 'PGD', 'CW', 'FAB1', 'FAB2')

Starting threads for generating adversarial sampels...

.....The command line might be dead for a while

##

Attacking with: []

Test accuracy: 97.11000061035156

Execution time: 0:03:07.892843

##

Attacking with: ['FGSM']

Test accuracy: 94.88999938964844

Execution time: 0:07:10.669043

##

Attacking with: ['PGD']

Test accuracy: 94.9000015258789

Execution time: 0:34:43.777608

##

Attacking with: ['FGSM', 'PGD']

Test accuracy: 90.41000366210938

Execution time: 0:41:25.141462

##

Attacking with: ['CW']

Test accuracy: 97.08999633789062

Execution time: 2:06:18.743635

##

Attacking with: ['FGSM', 'CW']

Test accuracy: 94.80999755859375

Execution time: 3:10:20.876512

##

Attacking with: ['DeepFool']

Test accuracy: 83.79000091552734

Execution time: 3:17:40.670423

##

Attacking with: ['DeepFool', 'FGSM']

Test accuracy: 56.439998626708984

Execution time: 3:21:56.449804

##

Attacking with: ['DeepFool', 'FGSM', 'FAB1']

Test accuracy: 56.4900016784668

Execution time: 3:25:49.405783

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'FAB2']  
Test accuracy: 56.459999084472656  
Execution time: 3:26:21.316585
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'FAB1', 'FAB2']  
Test accuracy: 56.470001220703125  
Execution time: 3:29:28.760279
```

```
#####  
##  
Attacking with: ['PGD', 'CW']  
Test accuracy: 94.80000305175781  
Execution time: 3:35:59.966987
```

```
#####  
##  
Attacking with: ['FGSM', 'PGD', 'CW']  
Test accuracy: 90.20999908447266  
Execution time: 3:41:05.990318
```

```
#####  
##  
Attacking with: ['DeepFool', 'PGD']  
Test accuracy: 56.279998779296875  
Execution time: 3:46:16.719757
```

```
#####  
##  
Attacking with: ['DeepFool', 'PGD', 'FAB1']  
Test accuracy: 56.20000076293945  
Execution time: 3:49:28.876206
```

```
#####  
##  
Attacking with: ['DeepFool', 'PGD', 'FAB2']  
Test accuracy: 56.290000915527344  
Execution time: 3:49:44.984452
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'PGD']  
Test accuracy: 24.549999237060547  
Execution time: 3:49:46.676338
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'PGD', 'FAB2']  
Test accuracy: 24.479999542236328  
Execution time: 3:52:23.225761
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'PGD', 'FAB1']  
Test accuracy: 24.540000915527344
```

Execution time: 3:52:33.720351

```
#####  
##  
Attacking with: ['DeepFool', 'PGD', 'FAB1', 'FAB2']  
Test accuracy: 56.290000915527344  
Execution time: 3:52:51.176544
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'PGD', 'FAB1', 'FAB2']  
Test accuracy: 24.399999618530273  
Execution time: 3:55:02.738183
```

```
#####  
##  
Attacking with: ['DeepFool', 'CW']  
Test accuracy: 83.04000091552734  
Execution time: 5:09:00.955376
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'CW']  
Test accuracy: 56.56999969482422  
Execution time: 5:11:24.941025
```

```
#####  
##  
Attacking with: ['DeepFool', 'CW', 'FAB1']  
Test accuracy: 82.98999786376953  
Execution time: 5:13:38.815613
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'CW', 'FAB2']  
Test accuracy: 56.529998779296875  
Execution time: 5:13:40.473946
```

```
#####  
##  
Attacking with: ['DeepFool', 'CW', 'FAB2']  
Test accuracy: 83.12999725341797  
Execution time: 5:13:58.899259
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'CW', 'FAB1']  
Test accuracy: 56.52000045776367  
Execution time: 5:14:22.178972
```

```
#####  
##  
Attacking with: ['DeepFool', 'FGSM', 'CW', 'FAB1', 'FAB2']  
Test accuracy: 56.4900016784668  
Execution time: 5:15:54.652663
```

```
#####  
##  
Attacking with: ['DeepFool', 'CW', 'FAB1', 'FAB2']  
Test accuracy: 83.04000091552734
```

Execution time: 5:16:18.071459

##

Attacking with: ['DeepFool', 'PGD', 'CW']
Test accuracy: 56.41999816894531
Execution time: 5:27:15.460865

##

Attacking with: ['DeepFool', 'FGSM', 'PGD', 'CW']
Test accuracy: 24.479999542236328
Execution time: 5:28:56.549224

##

Attacking with: ['DeepFool', 'PGD', 'CW', 'FAB1']
Test accuracy: 56.29999923706055
Execution time: 5:29:02.271638

##

Attacking with: ['DeepFool', 'PGD', 'CW', 'FAB2']
Test accuracy: 56.20000076293945
Execution time: 5:29:12.643965

##

Attacking with: ['DeepFool', 'PGD', 'CW', 'FAB1', 'FAB2']
Test accuracy: 56.470001220703125
Execution time: 5:30:21.932223

##

Attacking with: ['DeepFool', 'FGSM', 'PGD', 'CW', 'FAB1']
Test accuracy: 24.6200008392334
Execution time: 5:30:22.536518

##

Attacking with: ['DeepFool', 'FGSM', 'PGD', 'CW', 'FAB2']
Test accuracy: 24.450000762939453
Execution time: 5:30:49.552298

##

Attacking with: ['DeepFool', 'FGSM', 'PGD', 'CW', 'FAB1', 'FAB2']
Test accuracy: 24.459999084472656
Execution time: 5:31:54.879401

##

Attacking with: ['DeepFool', 'FAB2']
Test accuracy: 83.68000030517578
Execution time: 7:57:40.702624

##

Attacking with: ['DeepFool', 'FAB1']
Test accuracy: 83.70999908447266

Execution time: 7:57:41.157284

##

Attacking with: ['FGSM', 'PGD', 'FAB1']
Test accuracy: 89.70999908447266
Execution time: 7:57:42.049139

##

Attacking with: ['FGSM', 'PGD', 'FAB2']
Test accuracy: 89.7300033569336
Execution time: 7:57:45.123432

##

Attacking with: ['DeepFool', 'FAB1', 'FAB2']
Test accuracy: 83.61000061035156
Execution time: 8:04:45.088691

##

Attacking with: ['FGSM', 'FAB1']
Test accuracy: 94.41999816894531
Execution time: 8:10:44.857648

##

Attacking with: ['FGSM', 'FAB2']
Test accuracy: 94.41000366210938
Execution time: 8:11:07.243530

##

Attacking with: ['FGSM', 'PGD', 'CW', 'FAB2']
Test accuracy: 89.68000030517578
Execution time: 8:13:33.277943

##

Attacking with: ['FGSM', 'PGD', 'CW', 'FAB1']
Test accuracy: 89.62000274658203
Execution time: 8:13:52.323711

##

Attacking with: ['PGD', 'FAB1']
Test accuracy: 94.4000015258789
Execution time: 8:15:58.366979

##

Attacking with: ['PGD', 'FAB2']
Test accuracy: 94.4000015258789
Execution time: 8:16:25.651317

##

Attacking with: ['FAB2']
Test accuracy: 96.7699966430664

Execution time: 8:32:39.748451

##

Attacking with: ['FAB1']
Test accuracy: 96.7699966430664
Execution time: 8:32:58.666691

##

Attacking with: ['FGSM', 'CW', 'FAB2']
Test accuracy: 94.41000366210938
Execution time: 8:51:13.988982

##

Attacking with: ['FGSM', 'CW', 'FAB1']
Test accuracy: 94.4000015258789
Execution time: 8:51:18.526701

##

Attacking with: ['PGD', 'CW', 'FAB1']
Test accuracy: 94.41000366210938
Execution time: 8:53:21.943140

##

Attacking with: ['PGD', 'CW', 'FAB2']
Test accuracy: 94.41000366210938
Execution time: 8:53:33.260760

##

Attacking with: ['CW', 'FAB1']
Test accuracy: 96.77999877929688
Execution time: 8:54:27.766193

##

Attacking with: ['CW', 'FAB2']
Test accuracy: 96.7699966430664
Execution time: 8:54:45.004788

##

Attacking with: ['FGSM', 'PGD', 'FAB1', 'FAB2']
Test accuracy: 89.7300033569336
Execution time: 9:08:32.188767

##

Attacking with: ['FGSM', 'PGD', 'CW', 'FAB1', 'FAB2']
Test accuracy: 89.63999938964844
Execution time: 9:11:55.215161

##

Attacking with: ['FGSM', 'FAB1', 'FAB2']
Test accuracy: 94.41000366210938

Execution time: 9:17:32.396903

Attacking with: ['PGD', 'FAB1', 'FAB2']
Test accuracy: 94.44999694824219
Execution time: 9:18:09.232408

Attacking with: ['FGSM', 'CW', 'FAB1', 'FAB2']
Test accuracy: 94.4000015258789
Execution time: 9:19:45.894192

Attacking with: ['PGD', 'CW', 'FAB1', 'FAB2']
Test accuracy: 94.41000366210938
Execution time: 9:19:59.493986

Attacking with: ['FAB1', 'FAB2']
Test accuracy: 96.7699966430664
Execution time: 9:20:03.448648

Attacking with: ['CW', 'FAB1', 'FAB2']
Test accuracy: 96.7699966430664
Execution time: 9:20:50.280868

##