

## Results

**Model** ResNet18  
**Optimizer** SGD  
**Learning rate** 0.001  
**Batch size** 32

<b>Method</b>	Baseline			
<b>Epochs</b>		51		
<b>Seed</b>	<b>Benign</b>	<b>FGSM 8/255 black-box</b>	<b>AA Linf 4/255</b>	<b>Training time</b>
	0	95.11	23.35	0
	1	95.13	22.18	0
	2	95.15	23.69	0
	3	95.1	22.46	0
	4	95.01	23.76	0
<b>Mean</b>		<b>95.1</b>	<b>23.09</b>	<b>0</b>
<b>Std</b>		0.05	0.72	0

<b>Method</b>	Isoreg		
<b>Epochs</b>		51	
<b>Lambda</b>		0.01	
<b>Warm-up</b>	1 epoch		
<b>Epsilon</b>		3.5	
<b>Norm</b>	Holder		
<b>Seed</b>	<b>Benign</b>	<b>FGSM 8/255 black-box</b>	<b>Training time</b>
	0	21.14	20.68
	1	10.47	11.16
	2	12.33	10.58
	3	17.42	12.32
	4	69.43	33.15
<b>Mean</b>		<b>26.16</b>	<b>17.58</b>
<b>Std</b>		24.55	9.62

**Method** Isoreg

## Results

Epochs	51			
Lambda	0.001			
Warm-up	1 epoch			
Epsilon	3.5			
Norm	Holder			
Seed	Benign	FGSM 8/255 black-box	Training time	
	0	94.11	27.31	24709
	1	94.27	25.95	24882
	2	94.92	25.44	24318
	3	94.51	25.5	24849
	4	94.22	26.32	24716
Mean		<b>94.41</b>	<b>26.1</b>	<b>24694.8</b>
Std		0.32	0.76	224.42

Method	Isoreg			
Epochs	51			
Lambda	0.002			
Warm-up	1 epoch			
Epsilon	3.5			
Norm	Holder			
Seed	Benign	FGSM 8/255 black-box	Training time	
	5	93.09	28.27	25064
	6	94.51	25.59	24493
	7	93.68	27.78	23862
	8	94.11	27.65	23188
	9	93.4	29.38	22169
Mean		<b>93.76</b>	<b>27.73</b>	<b>23755.2</b>
Std		0.56	1.38	1129.87

Method	Temperature	$f_{\alpha}(x) = \text{soft}(\alpha * s(x))$ with $\alpha.\text{detach}()$
Epochs	51	
Warm-up	3 epoch	
Epsilon	1.74	

# Results

Seed	Benign	FGSM 8/255 black-box	Training time	
	0	92.62	24.16	24315
	1	92.71	25.55	24113
	2	92.77	25.47	22168
	3	91.64	22.76	22573
	4	92.38	26.37	23578
Mean		<b>92.42</b>	<b>24.86</b>	<b>23349.4</b>
Std		0.46	1.42	944.22

Method	Randbound			
Epochs		51		
Lambda		0.02		
Warm-up	1 epoch			
Epsilon		3.5		
Norm	Holder			
Seed	Benign	FGSM 8/255 black-box	Training time	
	0	80	20.72	9056
	1	81.96	18.19	9087
	2	81.84	19.86	8930
	3	82.43	21.68	9046
	4	80.05	19.03	9041
Mean		<b>81.26</b>	<b>19.9</b>	<b>9032</b>
Std		1.15	1.37	59.75

Method	Randbound			
Epochs		51		
Lambda		0.005		
Warm-up	1 epoch			
Epsilon		3.5		
Norm	Holder			
Seed	Benign	FGSM 8/255 black-box	Training time	
	5	91.94	23.33	9139
	6	93.42	23.9	9425

			Results	
	7	93.38	23.84	9166
	8	93.7	24.2	9252
	9	93.22	22.33	9125
Mean		<b>93.13</b>	<b>23.52</b>	<b>9221.4</b>
Std		0.69	0.74	124.04

Method	Gnbound			
Epochs		51		
Lambda		0.005		
Warm-up	1 epoch			
Epsilon		3.5		
Std	16/255			
Seed	Benign	FGSM 8/255 black-box	Training time	
	0	93.61	27.57	9418
	1	93.66	27.77	9637
	2	93.16	29.36	9205
	3	93.63	27.96	9231
	4	93.37	28.98	9428
Mean		<b>93.49</b>	<b>28.33</b>	<b>9383.8</b>
Std		0.22	0.79	175.04

Method	Gn			
Epochs		51		
Warm-up	0 epoch			
Std	8/255			
Seed	Benign	FGSM 8/255 black-box	Training time	
	0	94.46	20.77	5414
	1	94.47	21.13	5454
	2	94.39	21.95	5427
	3	94.7	21.65	5372
	4	94.71	23.01	5254
Mean		<b>94.55</b>	<b>21.7</b>	<b>5384.2</b>
Std		0.15	0.86	78.57

## Results

<b>Method</b>	Gn			
<b>Epochs</b>		51		
<b>Warm-up</b>	0 epoch			
<b>Std</b>	16/255			
<b>Seed</b>	<b>Benign</b>	<b>FGSM 8/255 black-box</b>	<b>Training time</b>	
	0	93.05	30.46	5301
	1	92.92	28.66	5325
	2	92.98	29.92	5395
	3	92.9	28.93	5510
	4	93.18	29.85	5320
<b>Mean</b>		<b>93.01</b>	<b>29.56</b>	<b>5370.2</b>
<b>Std</b>		0.11	0.75	85.89

<b>Method</b>	FGSM			
<b>Epochs</b>		51		
<b>Warm-up</b>	0 epoch			
<b>Std</b>	8/255			
<b>Seed</b>	<b>Benign</b>	<b>FGSM 8/255 black-box</b>	<b>Training time</b>	
	0	61.79	61.62	8598
	1	61.28	61.59	8624
	2	61.8	62.95	8777
	3	65.51	67.16	8592
	4	64.99	64.74	8546
<b>Mean</b>		<b>63.07</b>	<b>63.61</b>	<b>8627.4</b>
<b>Std</b>		2.01	2.36	88.23

<b>Method</b>	Jacreg	
<b>Epochs</b>		51
<b>Lambda</b>		1000
<b>Warm-up</b>	0 epoch	
<b>Norm</b>	Holder	

# Results

Seed	Benign	FGSM 8/255 black-box	Training time	
0	95.11		23.35	24449
1	95.13		22.18	23756
2	95.15		23.69	24687
3	95.1		22.46	24887
4	95.01		23.76	24633
Mean	<b>95.1</b>		<b>23.09</b>	<b>24482.4</b>
Std	0.05		0.72	435.03

Method	Teacher			
Epochs	51			
Temp	20			
Seed	Benign	FGSM 8/255 black-box	Training time	
-5	94.52		23.28	5340
-4	94.02		28.07	5340
-3	94.21		25.89	5338
-2	94.04		27.01	5267
-1	94.03		27.78	5212
Mean	<b>94.16</b>		<b>26.41</b>	<b>5299.4</b>
Std	0.21		1.94	58.04

Method	Distillation			
Epochs	51			
Temp	20			
Seed	Benign	FGSM 8/255 black-box	AA Linf 4/255	Training time
0	93.9		26.63	0 8110
1	94.13		27.39	0 8269
2	94.37		25.31	0 8261
3	93.89		26.65	0 8159
4	93.95		25.34	0 8124
Mean	<b>94.05</b>		<b>26.26</b>	<b>0 8184.6</b>
Std	0.2		0.91	0 75.59