

Results of apply SAND on our experimental datasets

We have executed SAND_v_0_2.jar(<https://github.com/ahaque-utd/SAND>) on our eight datasets, and the results are as follows:

➤ satimage:

high- α :

Chunk#	FP	FN	NC	Err	
FP%	FN%	NC(total)	Err%		
0.0	100.0	27	17.747252747252747		
Method	Traintime per 1K (ms):			Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	54.705882352941174			186.47058823529412	241.1764705882353
Processing speed:	4146.341463414634				

low- α :

Error running on low- α data

```
E:\SAND>java -Djava.ext.dirs=E:\SAND -jar SAND_v_0_2.jar -S 100 -F low
Num Data val: 100
Num Data val: 200
Num Data val: 300
Num Data val: 400
Num Data val: 500
Num Data val: 600
Num Data val: 700

% of labeled data = 0.9971387696709585
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)
```

random- α :

Chunk#	FP	FN	NC	Err	
FP%	FN%	NC(total)	Err%		
0.0	100.0	72	27.5		
Method	Traintime per 1K (ms):			Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	8.333333333333334			201.66666666666666	210.0
Processing speed:	4761.9047619047615				

➤ USPS:

high- α :

Chunk#	FP	FN	NC	Err	
FP%	FN%	NC(total)	Err%		
0.0	100.0	72	13.428571428571429		
Method	Traintime per 1K (ms):			Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	67.6923076923077			635.3846153846154	703.0769230769231
Processing speed:	1422.3194748358862				

low- α :

Error running on low- α data

```
E:\SAND>java -Djava.ext.dirs=E:\SAND -jar SAND_v_0_2.jar -S 100 -F low
Num Data val: 100
Num Data val: 200
Num Data val: 300
Num Data val: 400
Num Data val: 500
ChangePoint Found!
Estimated change point is 234
ChangePoint Found!
Estimated change point is 183
Num Data val: 600
ChangePoint Found!
Estimated change point is 172
Num Data val: 700
Num Data val: 800
ChangePoint Found!
Estimated change point is 100
Num Data val: 900
Num Data val: 1000
ChangePoint Found!
Estimated change point is 111
Num Data val: 1100
Num Data val: 1200
Num Data val: 1300
Num Data val: 1400
Num Data val: 1500
% of labeled data = 0.9906604402935291
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)
```

random- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)		Err%
0.0	100.0	66		14.076923076923077
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	97.6923076923077		663.8461538461538	761.5384615384615
Processing speed: 1313.1313131313132				

➤ **HAR:**

high- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)		Err%
0.0	100.0	99		12.16
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	777.6		6375.6	7153.2
Processing speed: 139.79757311413073				

low- α :

Error running on low- α data

```
E:\SAND>java -Djava.ext.dirs=E:\SAND -jar SAND_v_0_2.jar -S 100 -F low
Num Data val: 100
Num Data val: 200
Num Data val: 300
Num Data val: 400
Num Data val: 500
Num Data val: 600
Num Data val: 700
Num Data val: 800
Num Data val: 900
Num Data val: 1000
Num Data val: 1100
Num Data val: 1200
Num Data val: 1300
Num Data val: 1400
Num Data val: 1500
Num Data val: 1600
Num Data val: 1700
Num Data val: 1800
Num Data val: 1900
% of labeled data = 1.0
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)
```

random- α :

Chunk#	FP	FN	NC	Err
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FP%	FN%	NC(total)	Err%
0.0	100.0	1	12.16
Method	Traintime per 1K (ms):		Testtime per 1K (ms)
MineClasS	156.4	651.6	Tottime per 1K (ms)
Processing speed:	1237.6237623762377		

➤ MNIST-10K:

high- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	269	32.44444444444444	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	0.0	15887.777777777777	15887.777777777777	
Processing speed:	62.94146443807259			

low- α :

Error running on low- α data

```
E:\SAND>java -Djava.ext.dirs=E:\SAND -jar SAND_v_0_2.jar -S 200 -F low
Num Data val: 100
Num Data val: 200
Num Data val: 300
Num Data val: 400
Num Data val: 500
Num Data val: 600
Num Data val: 700
Num Data val: 800
Num Data val: 900

% of labeled data = 1.0
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)
```

random- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	248	29.333333333333332	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	131.11111111111111	3576.6666666666665	3707.7777777777778	
Processing speed:	269.7033263410249			

➤ pendigits:

high- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	22	22.77056277056277	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	44.27860696517413	420.8955223880597	465.1741293532338	
Processing speed:	2149.7326203208554			

low- α :

Error running on low- α data

```
E:\SAND>java -Djava.ext.dirs=E:\SAND -jar SAND_v_0_2.jar -S 100 -F low
Num Data val: 100
Num Data val: 200

ChangePoint Found!
Estimated change point is 104
Num Data val: 300
Num Data val: 400
Num Data val: 500
Num Data val: 600
Num Data val: 700
Num Data val: 800
Num Data val: 900
Num Data val: 1000
Num Data val: 1100
Num Data val: 1200
Num Data val: 1300
Num Data val: 1400
Num Data val: 1500
Num Data val: 1600
Num Data val: 1700
Num Data val: 1800
Num Data val: 1900
Num Data val: 2000
Num Data val: 2100

% of labeled data = 0.10434782608695652
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)
```

random- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	24	17.80258519388954	
Method	Traintime per 1K (ms):			Testtime per 1K (ms)
MineClasS	26.43948296122209			746.180963572268
Processing speed:	1294.2965779467681			Tottime per 1K (ms)

➤ MNIST:

high- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	18	14.819148936170213	
Method	Traintime per 1K (ms):			Testtime per 1K (ms)
MineClasS	530.8510638297872			666.3829787234042
Processing speed:	835.2585747289852			Tottime per 1K (ms)

low- α :

Error running on low- α data

```

Num Data val: 7200
Num Data val: 7300
Num Data val: 7400

ChangePoint Found!
Estimated change point is 2650
Num Data val: 7500

ChangePoint Found!
Estimated change point is 100
Num Data val: 7600
Num Data val: 7700
Num Data val: 7800

ChangePoint Found!
Estimated change point is 191
Num Data val: 7900
Num Data val: 8000

ChangePoint Found!
Estimated change point is 100
Num Data val: 8100
Num Data val: 8200
Num Data val: 8300
Num Data val: 8400
Num Data val: 8500
Num Data val: 8600
Num Data val: 8700
Num Data val: 8800
Num Data val: 8900
Num Data val: 9000
Num Data val: 9100
Num Data val: 9200
Num Data val: 9300
Num Data val: 9400

% of labeled data = 1.0
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)

E:\SAND>

```

random- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	10	17.319148936170213	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	3380.1063829787236		2251.9148936170213	5632.021276595745
Processing speed:	177.55614740938026			

➤ Fashion-MNIST:

high- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	52	14.354166666666667	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	3375.8333333333335		1405.8333333333333	4781.666666666667
Processing speed:	209.13210177762286			

low- α :

Error running on low- α data

```

Num Data val: 6200
Num Data val: 6300
Num Data val: 6400

ChangePoint Found!
Estimated change point is 1928
Num Data val: 6500

ChangePoint Found!
Estimated change point is 100
Num Data val: 6600

ChangePoint Found!
Estimated change point is 100
Num Data val: 6700
Num Data val: 6800

% of labeled data = 1.0
Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClass.Miner.Classify(Miner.java:1538)
    at mineClass.Miner.main(Miner.java:1907)

```

random- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	35	18.520833333333334	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	1462.0833333333333		901.875	2363.9583333333335
Processing speed:	423.01930025557414			

➤ NYTimes:

high- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	11	0.25	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	496.34615384615387		1846.3461538461538	2342.6923076923076
Processing speed:	426.85930060745363			

low- α :

Error running on low- α data

```
ChangePoint Found!
Estimated change point is 100
Num Data val: 1000
Num Data val: 7100
Num Data val: 7200
Num Data val: 7300
Num Data val: 7400
Num Data val: 7500

ChangePoint Found!
Estimated change point is 660
Num Data val: 7600
Num Data val: 7700
Num Data val: 7800
Num Data val: 7900
Num Data val: 8000
Num Data val: 8100
Num Data val: 8200
Num Data val: 8300
Num Data val: 8400
Num Data val: 8500
Num Data val: 8600
Num Data val: 8700
Num Data val: 8800
Num Data val: 8900
Num Data val: 9000

ChangePoint Found!
Estimated change point is 1440
Num Data val: 9100
Num Data val: 9200
Num Data val: 9300
Num Data val: 9400
Num Data val: 9500
Num Data val: 9600
Num Data val: 9700
Num Data val: 9800

Exception in thread "main" java.lang.StringIndexOutOfBoundsException: String index out of range: 4
    at java.lang.String.substring(Unknown Source)
    at mineClas.Miner.classify(Miner.java:1538)
    at mineClas.Miner.main(Miner.java:1907)
```

random- α :

Chunk#	FP	FN	NC	Err
FP%	FN%	NC(total)	Err%	
0.0	100.0	10	0.3235294117647059	
Method	Traintime per 1K (ms):		Testtime per 1K (ms)	Tottime per 1K (ms)
MineClasS	167.7941176470588		1201.1764705882354	1368.9705882352941
Processing speed:	730.4758835535504			