

## Algorithms Comparison:

Let's see how different algorithms score on various datasets:

<IPython.core.display.HTML object>

	CE	EC	LCCS	ICS	S <sup>3</sup>	Frobenius Norm
isoN	6990	0.509512	544	0.774429	0.443669	172.232401
NETAL	212	0.015453	35	0.010716	0.006368	253.373242
pinalog	9400	0.685181	731	0.561898	0.446598	165.402539
CGRAAL	5688	0.414607	661	0.273857	0.197493	216.041663
GRAAL	5944	0.433268	210	0.342357	0.236464	213.658606
MIGRAAL	5925	0.431883	549	0.305870	0.218112	213.836386
HubAlign	8605	0.627232	224	0.414319	0.332458	187.098904
MAGNA	95	0.006925	17	0.005149	0.002962	262.766056
PROPER	10039	0.731759	771	0.525437	0.440578	161.027948
SPINAL-I	9690	0.706320	737	0.489147	0.406477	167.056877
SPINAL-II	9549	0.696042	806	0.478575	0.395846	171.318417

Main parameteres: SEED\_KEEP\_RATIO: 0.5714285714285714, BUCKET\_SIZE: 1400

Main parameteres: SEED\_KEEP\_RATIO: 0.3, BUCKET\_SIZE: 1400

	CE	EC	LCCS	ICS	S <sup>3</sup>	Frobenius Norm
yeast-fly isoN	6990	0.509512	544	0.774429	0.443669	172.232401
NETAL	212	0.015453	35	0.010716	0.006368	253.373242
pinalog	9400	0.685181	731	0.561898	0.446598	165.402539
CGRAAL	5688	0.414607	661	0.273857	0.197493	216.041663
GRAAL	5944	0.433268	210	0.342357	0.236464	213.658606
MIGRAAL	5925	0.431883	549	0.305870	0.218112	213.836386
HubAlign	8605	0.627232	224	0.414319	0.332458	187.098904
MAGNA	95	0.006925	17	0.005149	0.002962	262.766056
PROPER	10039	0.731759	771	0.525437	0.440578	161.027948
SPINAL-I	9690	0.706320	737	0.489147	0.406477	167.056877
SPINAL-II	9549	0.696042	806	0.478575	0.395846	171.318417

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## Parameter Comparison

Now Let's compare different parameters from our own algorithm:

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### bucket size & keep ratio

	CE	EC	LCCS	\
seedexsingle-prd	bucket size: 800	keep ratio: 0.1	9214	0.671623 605

	keep ratio: 0.2	9242	0.673664	668
	keep ratio: 0.3	8953	0.652599	334
	keep ratio: 0.4	9424	0.686931	625
	keep ratio: 0.5	9668	0.704716	666
	keep ratio: 0.6	9476	0.690721	554
	keep ratio: 0.7	9307	0.678402	567
bucket size: 1000	keep ratio: 0.1	8805	0.641811	380
	keep ratio: 0.2	9792	0.713755	633
	keep ratio: 0.3	9794	0.713900	597
	keep ratio: 0.4	9732	0.709381	578
	keep ratio: 0.5	9208	0.671186	609
	keep ratio: 0.6	9254	0.674539	611
	keep ratio: 0.7	9245	0.673883	578
bucket size: 1200	keep ratio: 0.1	9563	0.697062	343
	keep ratio: 0.2	9807	0.714848	715
	keep ratio: 0.3	9953	0.725490	508
	keep ratio: 0.4	8845	0.644726	355
	keep ratio: 0.5	8988	0.655150	324
	keep ratio: 0.6	6296	0.458926	397
	keep ratio: 0.7	5986	0.436329	383
bucket size: 1400	keep ratio: 0.1	9985	0.727823	751
	keep ratio: 0.2	10082	0.734893	657
	keep ratio: 0.3	8856	0.645528	373
	keep ratio: 0.4	9222	0.672206	321
	keep ratio: 0.5	9410	0.685910	690
	keep ratio: 0.6	9512	0.693345	646
	keep ratio: 0.7	9123	0.664990	621
seedexsingle-prd-jac bucket size: 800	keep ratio: 0.1	8674	0.632262	722
	keep ratio: 0.2	8270	0.602814	446
	keep ratio: 0.3	8504	0.619870	417
	keep ratio: 0.4	7895	0.575479	397
	keep ratio: 0.5	7479	0.545156	723
	keep ratio: 0.6	7765	0.566003	596
	keep ratio: 0.7	7622	0.555580	414
bucket size: 1000	keep ratio: 0.1	9074	0.661418	341
	keep ratio: 0.2	8777	0.639770	436
	keep ratio: 0.3	8647	0.630294	437
	keep ratio: 0.4	8092	0.589839	559
	keep ratio: 0.5	7953	0.579707	611
	keep ratio: 0.6	6931	0.505212	556
	keep ratio: 0.7	6731	0.490633	451
bucket size: 1200	keep ratio: 0.1	7669	0.559006	477
	keep ratio: 0.2	8768	0.639114	578
	keep ratio: 0.3	8690	0.633428	531
	keep ratio: 0.4	7321	0.533639	617
	keep ratio: 0.5	7065	0.514979	681
	keep ratio: 0.6	6250	0.455573	423
	keep ratio: 0.7	7430	0.541585	438
bucket size: 1400	keep ratio: 0.1	9351	0.681609	408
	keep ratio: 0.2	9389	0.684379	382
	keep ratio: 0.3	8647	0.630294	436

	keep ratio: 0.4	8361	0.609447	583
	keep ratio: 0.5	8271	0.602887	481
	keep ratio: 0.6	8132	0.592755	427
	keep ratio: 0.7	8465	0.617027	427
seedexsingle-prd-ada bucket size: 800	keep ratio: 0.1	8237	0.600408	718
	keep ratio: 0.2	8527	0.621547	339
	keep ratio: 0.3	8887	0.647788	382
	keep ratio: 0.4	8628	0.628909	355
	keep ratio: 0.5	8620	0.628326	383
	keep ratio: 0.6	9213	0.671550	604
	keep ratio: 0.7	7352	0.535899	527
bucket size: 1000	keep ratio: 0.1	9078	0.661710	734
	keep ratio: 0.2	8760	0.638531	364
	keep ratio: 0.3	8819	0.642831	316
	keep ratio: 0.4	8596	0.626576	307
	keep ratio: 0.5	8261	0.602158	309
	keep ratio: 0.6	8220	0.599169	321
	keep ratio: 0.7	8548	0.623077	527
bucket size: 1200	keep ratio: 0.1	8641	0.629856	639
	keep ratio: 0.2	8742	0.637218	289
	keep ratio: 0.3	8953	0.652599	314
	keep ratio: 0.4	8669	0.631897	345
	keep ratio: 0.5	9300	0.677892	560
	keep ratio: 0.6	8241	0.600700	378
	keep ratio: 0.7	9022	0.657628	468
bucket size: 1400	keep ratio: 0.1	8667	0.631752	553
	keep ratio: 0.2	9095	0.662949	588
	keep ratio: 0.3	9029	0.658138	763
	keep ratio: 0.4	6725	0.490196	370
	keep ratio: 0.5	9157	0.667468	630
	keep ratio: 0.6	9543	0.695605	389
	keep ratio: 0.7	8602	0.627014	404

			ICS	S <sup>3</sup> \
seedexsingle-prd	bucket size: 800	keep ratio: 0.1	0.447825	0.367384
		keep ratio: 0.2	0.451093	0.370198
		keep ratio: 0.3	0.436625	0.354280
		keep ratio: 0.4	0.459371	0.379847
		keep ratio: 0.5	0.470119	0.392753
		keep ratio: 0.6	0.460604	0.381850
		keep ratio: 0.7	0.454532	0.373955
	bucket size: 1000	keep ratio: 0.1	0.429407	0.346394
		keep ratio: 0.2	0.475686	0.399478
		keep ratio: 0.3	0.478410	0.401443
		keep ratio: 0.4	0.472542	0.395899
		keep ratio: 0.5	0.448996	0.368040
		keep ratio: 0.6	0.452120	0.371155
		keep ratio: 0.7	0.450844	0.370096
	bucket size: 1200	keep ratio: 0.1	0.466624	0.387951
		keep ratio: 0.2	0.478297	0.401663
		keep ratio: 0.3	0.485181	0.409926

	keep ratio: 0.4	0.432857	0.349494
	keep ratio: 0.5	0.441975	0.358559
	keep ratio: 0.6	0.308054	0.225979
	keep ratio: 0.7	0.295488	0.213854
bucket size: 1400	keep ratio: 0.1	0.485628	0.410990
	keep ratio: 0.2	0.490513	0.416767
	keep ratio: 0.3	0.430488	0.348182
	keep ratio: 0.4	0.448868	0.368261
	keep ratio: 0.5	0.458778	0.379130
	keep ratio: 0.6	0.466526	0.386730
	keep ratio: 0.7	0.447140	0.364935
seedexsingle-prd-jac bucket size: 800	keep ratio: 0.1	0.421723	0.338656
	keep ratio: 0.2	0.405213	0.319824
	keep ratio: 0.3	0.419826	0.333870
	keep ratio: 0.4	0.389550	0.302595
	keep ratio: 0.5	0.366528	0.280691
	keep ratio: 0.6	0.380824	0.294754
	keep ratio: 0.7	0.374951	0.288439
bucket size: 1000	keep ratio: 0.1	0.442634	0.360867
	keep ratio: 0.2	0.426938	0.344196
	keep ratio: 0.3	0.420206	0.337115
	keep ratio: 0.4	0.393561	0.308996
	keep ratio: 0.5	0.388482	0.303110
	keep ratio: 0.6	0.341614	0.255974
	keep ratio: 0.7	0.344226	0.253598
bucket size: 1200	keep ratio: 0.1	0.372191	0.287713
	keep ratio: 0.2	0.427686	0.344492
	keep ratio: 0.3	0.422706	0.339626
	keep ratio: 0.4	0.357453	0.272369
	keep ratio: 0.5	0.345917	0.260913
	keep ratio: 0.6	0.306252	0.224199
	keep ratio: 0.7	0.366732	0.279860
bucket size: 1400	keep ratio: 0.1	0.455502	0.375587
	keep ratio: 0.2	0.456020	0.376781
	keep ratio: 0.3	0.419900	0.336918
	keep ratio: 0.4	0.405087	0.321602
	keep ratio: 0.5	0.403818	0.318974
	keep ratio: 0.6	0.402774	0.315475
	keep ratio: 0.7	0.416892	0.331194
seedexsingle-prd-ada bucket size: 800	keep ratio: 0.1	0.400808	0.316406
	keep ratio: 0.2	0.414536	0.330991
	keep ratio: 0.3	0.432584	0.350213
	keep ratio: 0.4	0.418652	0.335720
	keep ratio: 0.5	0.422156	0.337801
	keep ratio: 0.6	0.449700	0.368623
	keep ratio: 0.7	0.358424	0.273522
bucket size: 1000	keep ratio: 0.1	0.441967	0.360510
	keep ratio: 0.2	0.426942	0.343840
	keep ratio: 0.3	0.431733	0.348205
	keep ratio: 0.4	0.420919	0.336504
	keep ratio: 0.5	0.402897	0.318196

		keep ratio: 0.6	0.400565	0.315911
		keep ratio: 0.7	0.417138	0.333087
bucket size: 1200		keep ratio: 0.1	0.419976	0.336842
		keep ratio: 0.2	0.425609	0.342595
		keep ratio: 0.3	0.435733	0.353692
		keep ratio: 0.4	0.423953	0.339987
		keep ratio: 0.5	0.455124	0.374200
		keep ratio: 0.6	0.403003	0.317854
		keep ratio: 0.7	0.446368	0.362198
bucket size: 1400		keep ratio: 0.1	0.421588	0.338422
		keep ratio: 0.2	0.442127	0.360984
		keep ratio: 0.3	0.439710	0.357953
		keep ratio: 0.4	0.326631	0.243810
		keep ratio: 0.5	0.448741	0.366749
		keep ratio: 0.6	0.468529	0.388812
		keep ratio: 0.7	0.424141	0.338688
			Frobenius Norm	
seedexsingle-prd	bucket size: 800	keep ratio: 0.1	180.471604	
		keep ratio: 0.2	180.161039	
		keep ratio: 0.3	183.341212	
		keep ratio: 0.4	178.129167	
		keep ratio: 0.5	175.368184	
		keep ratio: 0.6	177.544361	
		keep ratio: 0.7	179.438012	
	bucket size: 1000	keep ratio: 0.1	184.948642	
		keep ratio: 0.2	173.948268	
		keep ratio: 0.3	173.925271	
		keep ratio: 0.4	174.636766	
		keep ratio: 0.5	180.538085	
		keep ratio: 0.6	180.027776	
		keep ratio: 0.7	180.127732	
	bucket size: 1200	keep ratio: 0.1	176.561604	
		keep ratio: 0.2	173.775718	
		keep ratio: 0.3	172.087187	
		keep ratio: 0.4	184.515582	
		keep ratio: 0.5	182.959012	
		keep ratio: 0.6	210.337824	
		keep ratio: 0.7	213.265093	
	bucket size: 1400	keep ratio: 0.1	171.714880	
		keep ratio: 0.2	170.581359	
		keep ratio: 0.3	184.396312	
		keep ratio: 0.4	180.382926	
		keep ratio: 0.5	178.286287	
		keep ratio: 0.6	177.138364	
		keep ratio: 0.7	181.477271	
seedexsingle-prd-jac	bucket size: 800	keep ratio: 0.1	186.359867	
		keep ratio: 0.2	190.646269	
		keep ratio: 0.3	188.175450	
		keep ratio: 0.4	194.540484	
		keep ratio: 0.5	198.771225	

	keep ratio: 0.6	195.872407
	keep ratio: 0.7	197.327140
bucket size: 1000	keep ratio: 0.1	182.016483
	keep ratio: 0.2	185.251181
	keep ratio: 0.3	186.649404
	keep ratio: 0.4	192.504545
	keep ratio: 0.5	193.943291
	keep ratio: 0.6	204.210676
	keep ratio: 0.7	206.160132
bucket size: 1200	keep ratio: 0.1	196.850197
	keep ratio: 0.2	185.348321
	keep ratio: 0.3	186.188077
	keep ratio: 0.4	200.354685
	keep ratio: 0.5	202.894061
	keep ratio: 0.6	210.774761
	keep ratio: 0.7	199.263644
bucket size: 1400	keep ratio: 0.1	178.946920
	keep ratio: 0.2	178.521707
	keep ratio: 0.3	186.649404
	keep ratio: 0.4	189.689220
	keep ratio: 0.5	190.635778
	keep ratio: 0.6	192.088521
	keep ratio: 0.7	188.589501
seedexsingle-prd-ada bucket size: 800	keep ratio: 0.1	190.992146
	keep ratio: 0.2	187.930838
	keep ratio: 0.3	184.059773
	keep ratio: 0.4	186.852883
	keep ratio: 0.5	186.938493
	keep ratio: 0.6	180.482686
	keep ratio: 0.7	200.044995
bucket size: 1000	keep ratio: 0.1	181.972525
	keep ratio: 0.2	185.434625
	keep ratio: 0.3	184.797186
	keep ratio: 0.4	187.195085
	keep ratio: 0.5	190.740662
	keep ratio: 0.6	191.170081
	keep ratio: 0.7	187.707219
bucket size: 1200	keep ratio: 0.1	186.713685
	keep ratio: 0.2	185.628662
	keep ratio: 0.3	183.341212
	keep ratio: 0.4	186.413519
	keep ratio: 0.5	179.516016
	keep ratio: 0.6	190.950255
	keep ratio: 0.7	182.586966
bucket size: 1400	keep ratio: 0.1	186.434975
	keep ratio: 0.2	181.785588
	keep ratio: 0.3	182.510274
	keep ratio: 0.4	206.218331
	keep ratio: 0.5	181.102181
	keep ratio: 0.6	176.788009
	keep ratio: 0.7	187.130970

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**bucket size & seed size**

			CE	EC	LCCS	\
seedexsingle-prd	bucket size: 800	seed size: 100	8798	0.641300	429	
		seed size: 200	9923	0.723303	632	
		seed size: 300	9550	0.696115	603	
		seed size: 400	9668	0.704716	666	
		seed size: 500	8791	0.640790	590	
		seed size: 600	8705	0.634521	610	
		seed size: 700	9075	0.661491	552	
		seed size: 800	7553	0.550550	590	
	bucket size: 1000	seed size: 100	8805	0.641811	380	
		seed size: 200	9792	0.713755	633	
		seed size: 300	9794	0.713900	597	
		seed size: 400	9732	0.709381	578	
		seed size: 500	9208	0.671186	609	
		seed size: 600	9254	0.674539	611	
		seed size: 700	9245	0.673883	578	
		seed size: 800	6012	0.438224	620	
	bucket size: 1200	seed size: 100	6894	0.502515	458	
		seed size: 200	5335	0.388877	537	
		seed size: 300	9837	0.717035	627	
		seed size: 400	8952	0.652526	321	
		seed size: 500	9361	0.682338	322	
		seed size: 600	8988	0.655150	324	
		seed size: 700	9635	0.702311	653	
		seed size: 800	8727	0.636125	584	
	bucket size: 1400	seed size: 100	6299	0.459144	533	
		seed size: 200	9791	0.713682	333	
		seed size: 300	8989	0.655223	463	
		seed size: 400	9083	0.662074	329	
		seed size: 500	9341	0.680881	623	
		seed size: 600	9432	0.687514	629	
		seed size: 700	9410	0.685910	690	
		seed size: 800	9244	0.673810	624	
seedexsingle-prd-jac	bucket size: 800	seed size: 100	8470	0.617392	447	
		seed size: 200	8269	0.602741	547	
		seed size: 300	6205	0.452292	503	
		seed size: 400	7479	0.545156	723	
		seed size: 500	8041	0.586121	574	
		seed size: 600	5247	0.382462	206	
		seed size: 700	6369	0.464247	551	
		seed size: 800	8137	0.593119	431	
	bucket size: 1000	seed size: 100	9074	0.661418	341	
		seed size: 200	8777	0.639770	436	
		seed size: 300	8647	0.630294	437	
		seed size: 400	8092	0.589839	559	
		seed size: 500	7953	0.579707	611	

	seed size: 600	6931	0.505212	556
	seed size: 700	6731	0.490633	451
	seed size: 800	6618	0.482397	512
bucket size: 1200	seed size: 100	8219	0.599096	467
	seed size: 200	8469	0.617319	439
	seed size: 300	8983	0.654785	616
	seed size: 400	8457	0.616444	676
	seed size: 500	8440	0.615205	660
	seed size: 600	7065	0.514979	681
	seed size: 700	8102	0.590568	522
	seed size: 800	6300	0.459217	423
bucket size: 1400	seed size: 100	7643	0.557111	431
	seed size: 200	8352	0.608791	525
	seed size: 300	9060	0.660398	584
	seed size: 400	6178	0.450324	529
	seed size: 500	8206	0.598149	431
	seed size: 600	6780	0.494205	381
	seed size: 700	8271	0.602887	481
	seed size: 800	8755	0.638166	674
seedexsingle-prd-ada bucket size: 800	seed size: 100	6543	0.476930	661
	seed size: 200	8385	0.611196	645
	seed size: 300	8529	0.621693	332
	seed size: 400	8620	0.628326	383
	seed size: 500	9419	0.686566	608
	seed size: 600	7474	0.544792	544
	seed size: 700	6691	0.487718	578
	seed size: 800	8135	0.592973	530
bucket size: 1000	seed size: 100	9078	0.661710	734
	seed size: 200	8760	0.638531	364
	seed size: 300	8819	0.642831	316
	seed size: 400	8596	0.626576	307
	seed size: 500	8261	0.602158	309
	seed size: 600	8220	0.599169	321
	seed size: 700	8548	0.623077	527
	seed size: 800	8780	0.639988	231
bucket size: 1200	seed size: 100	8304	0.605292	646
	seed size: 200	9234	0.673081	353
	seed size: 300	6295	0.458853	340
	seed size: 400	8758	0.638385	306
	seed size: 500	8823	0.643123	610
	seed size: 600	9300	0.677892	560
	seed size: 700	7947	0.579270	634
	seed size: 800	8938	0.651505	537
bucket size: 1400	seed size: 100	9386	0.684161	337
	seed size: 200	9284	0.676726	553
	seed size: 300	8354	0.608937	698
	seed size: 400	9220	0.672061	649
	seed size: 500	8218	0.599023	594
	seed size: 600	9168	0.668270	613
	seed size: 700	9157	0.667468	630
	seed size: 800	8337	0.607697	607



			ICS	S <sup>3</sup> \
seedexsingle-prd	bucket size: 800	seed size: 100	0.430346	0.346856
		seed size: 200	0.483553	0.408068
		seed size: 300	0.465014	0.386546
		seed size: 400	0.470119	0.392753
		seed size: 500	0.429248	0.345993
		seed size: 600	0.426319	0.342272
		seed size: 700	0.443462	0.361439
		seed size: 800	0.369720	0.284001
	bucket size: 1000	seed size: 100	0.429407	0.346394
		seed size: 200	0.475686	0.399478
		seed size: 300	0.478410	0.401443
		seed size: 400	0.472542	0.395899
		seed size: 500	0.448996	0.368040
		seed size: 600	0.452120	0.371155
		seed size: 700	0.450844	0.370096
		seed size: 800	0.297403	0.215314
	bucket size: 1200	seed size: 100	0.335899	0.252075
		seed size: 200	0.308435	0.207741
		seed size: 300	0.479596	0.403271
		seed size: 400	0.435811	0.353722
		seed size: 500	0.457415	0.377110
		seed size: 600	0.441975	0.358559
		seed size: 700	0.471403	0.392896
		seed size: 800	0.427187	0.343299
	bucket size: 1400	seed size: 100	0.320821	0.232831
		seed size: 200	0.475823	0.399551
		seed size: 300	0.437890	0.355887
		seed size: 400	0.441329	0.360194
		seed size: 500	0.453359	0.373909
		seed size: 600	0.458487	0.379420
		seed size: 700	0.458778	0.379130
		seed size: 800	0.454653	0.372637
seedexsingle-prd-jac	bucket size: 800	seed size: 100	0.413817	0.329354
		seed size: 200	0.403977	0.319032
		seed size: 300	0.302123	0.221196
		seed size: 400	0.366528	0.280691
		seed size: 500	0.395174	0.308960
		seed size: 600	0.296390	0.200458
		seed size: 700	0.326381	0.237083
		seed size: 800	0.402842	0.315620
	bucket size: 1000	seed size: 100	0.442634	0.360867
		seed size: 200	0.426938	0.344196
		seed size: 300	0.420206	0.337115
		seed size: 400	0.393561	0.308996
		seed size: 500	0.388482	0.303110
		seed size: 600	0.341614	0.255974
		seed size: 700	0.344226	0.253598
		seed size: 800	0.356285	0.257750
	bucket size: 1200	seed size: 100	0.401534	0.316493

		seed size: 200	0.413142	0.328906
		seed size: 300	0.436874	0.355087
		seed size: 400	0.411793	0.327803
		seed size: 500	0.414030	0.328865
		seed size: 600	0.345917	0.260913
		seed size: 700	0.396321	0.310898
		seed size: 800	0.325750	0.235435
	bucket size: 1400	seed size: 100	0.413157	0.311007
		seed size: 200	0.408231	0.323395
		seed size: 300	0.441714	0.359952
		seed size: 400	0.299641	0.219397
		seed size: 500	0.401448	0.316175
		seed size: 600	0.329014	0.246134
		seed size: 700	0.403818	0.318974
		seed size: 800	0.428683	0.344862
seedexsingle-prd-ada	bucket size: 800	seed size: 100	0.318162	0.235860
		seed size: 200	0.407217	0.323433
		seed size: 300	0.415097	0.331391
		seed size: 400	0.422156	0.337801
		seed size: 500	0.461422	0.381135
		seed size: 600	0.365888	0.280219
		seed size: 700	0.327140	0.243477
		seed size: 800	0.403502	0.315984
	bucket size: 1000	seed size: 100	0.441967	0.360510
		seed size: 200	0.426942	0.343840
		seed size: 300	0.431733	0.348205
		seed size: 400	0.420919	0.336504
		seed size: 500	0.402897	0.318196
		seed size: 600	0.400565	0.315911
		seed size: 700	0.417138	0.333087
		seed size: 800	0.427854	0.344855
	bucket size: 1200	seed size: 100	0.410135	0.323591
		seed size: 200	0.450835	0.369848
		seed size: 300	0.315808	0.230106
		seed size: 400	0.425662	0.342967
		seed size: 500	0.432712	0.348928
		seed size: 600	0.455124	0.374200
		seed size: 700	0.389006	0.303309
		seed size: 800	0.438481	0.355176
	bucket size: 1400	seed size: 100	0.456940	0.377342
		seed size: 200	0.451140	0.371152
		seed size: 300	0.406877	0.322586
		seed size: 400	0.447204	0.367097
		seed size: 500	0.400058	0.315555
		seed size: 600	0.446849	0.365725
		seed size: 700	0.448741	0.366749
		seed size: 800	0.408797	0.323440
				Frobenius Norm
seedexsingle-prd	bucket size: 800	seed size: 100	185.024323	
		seed size: 200	172.435495	

	seed size: 300	176.708800
	seed size: 400	175.368184
	seed size: 500	185.099973
	seed size: 600	186.026880
	seed size: 700	182.005494
	seed size: 800	198.025251
bucket size: 1000	seed size: 100	184.948642
	seed size: 200	173.948268
	seed size: 300	173.925271
	seed size: 400	174.636766
	seed size: 500	180.538085
	seed size: 600	180.027776
	seed size: 700	180.127732
	seed size: 800	213.021126
bucket size: 1200	seed size: 100	204.572725
	seed size: 200	219.285202
	seed size: 300	173.430101
	seed size: 400	183.352120
	seed size: 500	178.835120
	seed size: 600	182.959012
	seed size: 700	175.744132
	seed size: 800	185.790204
bucket size: 1400	seed size: 100	210.309296
	seed size: 200	173.959765
	seed size: 300	182.948080
	seed size: 400	181.917564
	seed size: 500	179.058650
	seed size: 600	178.039321
	seed size: 700	178.286287
	seed size: 800	180.138835
seedexsingle-prd-jac bucket size: 800	seed size: 100	188.536469
	seed size: 200	190.656760
	seed size: 300	211.201326
	seed size: 400	198.771225
	seed size: 500	193.033676
	seed size: 600	220.086347
	seed size: 700	209.642553
	seed size: 800	192.036455
bucket size: 1000	seed size: 100	182.016483
	seed size: 200	185.251181
	seed size: 300	186.649404
	seed size: 400	192.504545
	seed size: 500	193.943291
	seed size: 600	204.210676
	seed size: 700	206.160132
	seed size: 800	207.253468
bucket size: 1200	seed size: 100	191.180543
	seed size: 200	188.547076
	seed size: 300	183.013661
	seed size: 400	188.674323
	seed size: 500	188.854441