

TABLE S1: Evaluation Results of Unimodal FUNCTIONS

Functions		SLIM(Ours)	GA	TLBO	DTBO	WO	GSA	WOA	GWO	AVOA	RSA	MPA	TSA	MVO
F1	Best	0	115178.9	15810.97	0	3090.086	102652.5	9.42E-28	2.03E-50	1.29E-40	950.7029	67068.28	21129.54	5774.195
	Mean	0	127663.3	21976.31	0	4154.675	117519.0	3.16E-25	8.57E-49	4.35E-30	62429.27	84591.05	39078.03	10062.17
	Worst	0	147585.4	30935.94	0	4989.159	130488.8	2.59E-24	4.52E-48	6.86E-29	137885.9	103925.4	76062.75	14586.72
	Std	0	8154.370	4290.922	0	514.9778	6490.972	6.08E-25	1.06E-48	1.58E-29	58249.34	11376.52	12284.36	2145.413
	Median	0	127089.1	20779.93	0	4101.349	118142.7	7.08E-26	5.40E-49	6.36E-33	68469.67	85195.86	40498.89	10058.97
	Rank	1	12	7	1	5	11	4	2	3	9	10	8	6
F2	Best	0	8.73E+16	70.93355	0	28.26999	33.25428	2.47E-17	1.77E-29	8.21E-20	22.58988	161.1829	84.85528	39.04934
	Mean	0	8.01E+22	109.2867	0	33.23792	40.36618	1.70E-16	7.14E-29	1.99E-14	2.26E+22	189.7700	142.0954	56.87514
	Worst	0	7.66E+23	139.0648	0	38.64667	47.67789	5.22E-16	2.56E-28	2.78E-13	3.44E+23	225.2267	216.0219	76.33318
	Std	0	1.77E+23	16.41313	0	3.082656	4.115627	1.27E-16	6.24E-29	6.17E-14	7.66E+22	18.16888	31.96635	10.41209
	Median	0	1.43E+21	111.3324	0	32.81891	40.93319	1.18E-16	5.67E-29	2.32E-16	7.94E+12	186.8033	136.2134	56.25724
	Rank	1	12	8	1	5	6	3	2	4	11	10	9	7
F3	Best	0	84094.81	13242.66	0	2071.179	40759.39	1.93E-11	4.95E-16	1.02E-44	2119.364	42641.75	27743.67	4604.743
	Mean	0	148316.4	25909.10	0.006771	3596.545	126299.9	7.47E-05	1.09E-12	9.46E-27	67073.31	58903.88	50436.58	14738.43
	Worst	0	235630.3	52299.62	0.135421	4944.201	222399.4	0.000827	1.71E-11	1.87E-25	187962.2	98633.65	75072.89	31608.41
	Std	0	40147.47	10308.03	0.030281	744.4649	42958.44	0.000218	3.79E-12	4.18E-26	70584.97	13891.16	15451.06	6521.395
	Median	0	140947.2	22974.21	1.50E-56	3755.162	123064.6	1.09E-07	2.20E-14	1.18E-30	24245.81	55092.24	48443.25	15166.39
	Rank	1	13	8	5	6	12	4	3	2	11	10	9	7
F4	Best	0	75.66426	34.69649	0	13.12828	75.85380	9.98E-09	1.55E-14	1.07E-21	10.19788	73.72661	44.87512	18.90861
	Mean	0	87.91896	42.90163	0	16.51656	82.79495	0.000239	4.58E-13	4.12E-16	54.73385	81.57019	65.63663	26.01049
	Worst	0	92.62310	52.39688	0	17.92168	85.27022	0.002829	2.74E-12	3.96E-15	93.43172	90.55677	83.93007	32.76835
	Std	0	3.545526	5.506864	0	1.406599	2.498018	0.000722	7.60E-13	1.05E-15	35.83248	4.777240	9.939783	3.720602
	Median	0	88.26820	42.32180	0	16.93309	83.92458	6.19E-06	1.62E-13	1.80E-17	81.43002	82.03081	67.25965	25.65801
	Rank	1	12	7	1	5	11	4	3	2	8	10	9	6
F5	Best	0	1.49E+08	3.82E+06	0	64107.81	146485.9	25.48977	25.33809	0	11093.18	2.14E+07	5.03E+06	406966.0
	Mean	0	2.58E+08	8.98E+06	0	168873.9	599867.8	27.41492	26.74198	0	1.32E+08	1.08E+08	2.73E+07	1.08E+06
	Worst	0	3.51E+08	1.45E+07	0	274220.5	1.27E+06	28.81947	28.75839	0	3.09E+08	2.33E+08	7.82E+07	2.02E+06
	Std	0	56304602	3758114	0	57283.56	312136.1	1.219474	0.800365	0	1.27E+08	4.60E+07	1.98E+07	493324.6
	Median	0	2.59E+08	8262852	0	183105.6	596049.1	27.10151	26.99842	0	1.74E+08	1.05E+08	2.07E+07	1.02E+06
	Rank	1	11	7	1	4	5	3	2	1	10	9	8	6
F6	Best	0	46464.74	6970.681	0	938.8109	48717.36	0.977938	8.54E-06	3.58E-07	507.6362	26750.47	5989.804	2141.712
	Mean	0	68489.01	11208.36	5.92E-10	1381.828	58859.66	1.935465	0.514373	2.97E-05	28714.05	40386.39	16268.49	4383.716
	Worst	0	82049.84	19109.51	1.18E-08	2097.894	69576.29	3.008589	1.009837	7.32E-05	73834.93	57281.56	36238.72	6265.461
	Std	0	8084.100	3492.957	2.65E-09	306.2587	6678.512	0.581749	0.271716	2.40E-05	33337.15	7314.923	7509.744	1211.925
	Median	0	69294.09	10235.48	6.26E-21	1336.636	60545.38	2.005124	0.499920	2.29E-05	4282.225	39492.66	14604.85	4137.833
	Rank	1	13	8	2	6	12	5	4	3	10	11	9	7
F7	Best	1.11E-07	78.62325	1.695744	3.71E-07	0.093912	78.35512	0.000896	0.000421	1.19E-06	0.062529	17.30172	28.48609	0.237973
	Mean	4.85E-06	128.8930	4.455180	2.28E-05	0.212582	126.8027	0.002608	0.001273	0.000120	48.12899	45.16218	57.49139	0.744428
	Worst	1.45E-05	164.4939	7.418298	6.18E-05	0.321107	190.1907	0.005587	0.002376	0.000444	145.4119	73.92218	105.5838	2.018721
	Std	4.43E-06	23.31702	1.627997	1.69E-05	0.061796	27.96786	0.001513	0.000521	0.000127	61.08620	14.61081	19.30663	0.526521
	Median	3.89E-06	133.3858	4.337502	2.30E-05	0.204908	128.5710	0.002161	0.001250	0.000110	0.276897	44.08116	55.23429	0.558128
	Rank	1	13	8	2	6	12	5	4	3	10	9	11	7
Sum Rank	7	86	58	13	37	69	28	20	18	69	69	63	46	
Mean Rank	1	12.28571	7.571429	1.857143	5.285714	9.857143	4	2.857143	2.571429	9.857143	9.857143	9	6.571429	
Total Rank	1	11	8	2	6	10	5	4	3	10	10	9	7	

TABLE S2: Evaluation Results of Multimodal Functions

Functions	SLIM(Ours)	GA	TLBO	DTBO	WO	GSA	WOA	GWO	AVOA	RSA	MPA	TSA	MVO	
F8	Best	-7938.863	-3140.121	-4403.288	-12569.48	-4612.797	-3714.151	-5951.087	-8103.902	-9354.380	-5389.782	-7498.461	-6019.899	-4198.501
	Mean	-6458.315	-2150.899	-2938.149	-11325.88	-4254.124	-2268.220	-5675.364	-5788.895	-4498.090	-3281.282	-5032.127	-4751.935	-3215.843
	Worst	-4830.108	-1404.175	-1857.917	-9016.335	-3795.241	-1448.534	-5537.492	-3261.473	-2542.903	-2512.068	-4349.624	-4001.680	-2162.140
	Std	847.6299	462.8547	638.1169	1738.770	220.4794	608.6911	95.98664	1517.686	1897.661	698.8154	702.0326	519.0238	543.0032
	Median	-6188.488	-2072.765	-2782.106	-12569.48	-4260.360	-2054.562	-5650.149	-6243.927	-3746.626	-3147.867	-4953.468	-4800.228	-3221.808
	Rank	2	13	11	1	8	12	4	3	7	9	5	6	10
F9	Best	0	384.8384	200.4854	0	132.6723	200.9112	0	0	0	144.0608	241.7856	179.6995	142.0001
	Mean	0	436.7874	261.5908	0	161.5875	239.6619	117.6192	4.664703	0	336.1590	298.5239	230.3672	184.9141
	Worst	0	465.6116	340.3995	0	178.1662	269.9969	227.1292	23.49207	0	488.7731	373.9714	285.2772	215.4027
	Std	0	22.84458	30.63733	0	11.64388	19.26039	78.59633	6.588999	0	119.9843	31.01433	31.60392	19.89479
	Median	0	439.1332	262.8652	0	163.9701	243.2676	144.1084	2.84E-14	0	400.9514	304.1129	224.6173	189.9756
	Rank	1	11	8	1	4	7	3	2	1	10	9	6	5
F10	Best	8.88E-16	20.37834	14.49337	8.88E-16	8.213749	9.995406	19.95888	7.99E-15	8.88E-16	6.632463	18.62286	15.55104	10.28058
	Mean	8.88E-16	20.63556	15.82902	5.06E-14	8.982471	11.04405	19.96434	7.99E-15	1.24E-15	14.76386	19.54289	17.87889	12.31919
	Worst	8.88E-16	20.80208	17.24121	9.88E-13	9.713206	12.25252	19.96677	7.99E-15	4.44E-15	19.70104	20.18165	19.81305	14.11698
	Std	0	0.136192	0.752241	2.21E-13	0.384555	0.638356	0.002327	0	1.09E-15	4.609261	0.448958	1.091447	0.938147
	Median	8.88E-16	20.68789	15.75594	8.88E-16	8.988021	10.87429	19.96407	7.99E-15	8.88E-16	16.60210	19.58212	18.09932	12.02113
	Rank	1	13	9	4	5	6	12	3	2	8	11	10	7
F11	Best	0	488.1832	75.48082	0	11.44262	519.6499	0	0	0	4.12352	235.8198	80.01944	20.11728
	Mean	0	620.2422	114.5474	0	14.11742	624.0461	0.005705	0.002241	0	290.6271	361.3782	169.3747	45.92941
	Worst	0	728.7562	155.3701	0	16.97734	747.1529	0.039457	0.019667	0	654.2128	552.8731	284.9638	67.23656
	Std	0	58.14499	20.97171	0	1.639622	63.74936	0.010914	0.005639	0	288.7377	77.60132	63.74201	14.48120
	Median	0	625.0893	114.6832	0	14.02399	615.3528	0	0	0	244.6637	349.3766	157.1596	41.68029
	Rank	1	10	6	1	4	11	3	2	1	8	9	7	5
F12	Best	3.40E-32	3.76E+08	182467.2	1.57E-32	11.11907	66963601	0.015782	0.006458	1.03E-07	9.541073	72185297	1062058	11.58386
	Mean	3.86E-32	6.00E+08	3034686	5.12E-12	15.63829	1.19E+08	0.138817	0.031885	1.55E-05	2.86E+08	2.13E+08	52243739	3698.421
	Worst	7.72E-21	8.7E+08	7811248	1.02E-10	29.54323	2.25E+08	0.669732	0.085876	4.66E-05	9.34E+08	3.43E+08	2.95E+08	35895.59
	Std	1.73E-12	1.26E+08	2162895	2.29E-11	5.164794	40961786	0.154154	0.018226	1.41E-05	3.38E+08	71583423	60905885	8155.006
	Median	1.73E-32	6.17E+08	3555938	1.57E-32	14.32211	1.16E+08	0.095003	0.02648	1.07E-05	56165878	1.99E+08	24488896	680.2067
	Rank	1	13	8	2	6	10	5	4	3	12	11	9	7
F13	Best	1.05E-32	5.63E+08	1.05E+06	1.35E-32	92.45545	1.78E+08	1.049557	0.103831	2.88E-05	38.02565	2.15E+08	3.70E+07	66378.02
	Mean	6.28E-28	1.08E+09	1.89E+07	9.79E-11	20876.84	2.91E+08	1.522005	0.431396	0.000159	4.55E+08	4.69E+08	1.05E+08	1.16E+06
	Worst	8.47E-27	1.38E+09	4.13E+07	1.91E-09	64222.51	4.68E+08	1.819873	0.721777	0.000375	1.42E+09	9.14E+08	2.76E+08	3.56E+06
	Std	1.77E-14	2.17E+08	1.14E+07	4.27E-10	19342.99	82244149	0.198957	0.181439	0.000113	5.38E+08	1.72E+08	5.64E+07	958360.9
	Median	8.26E-32	1.03E+09	1.49E+07	6.34E-28	13733.79	2.74E+08	1.567729	0.437856	0.000126	385970.8	4.72E+08	1.01E+08	996264.5
	Rank	1	13	8	2	6	10	5	4	3	11	12	9	7
Sum Rank	7	73	50	11	33	56	32	18	17	58	57	47	41	
Mean Rank	1.166667	12.16667	8.333333	1.833333	5.5	9.333333	5.333333	3	2.833333	9.666667	9.5	7.833333	6.833333	
Total Rank	1	13	9	2	6	10	5	4	3	12	11	8	7	

TABLE S3: Evaluation Results of Fixed-Dimensional Multimodal Functions

Functions		SLIM(Ours)	GA	TLBO	DTBO	WO	GSA	WOA	GWO	AVOA	RSA	MPA	TSA	MVO
F14	Best	0.998004	2.101129	0.998004	0.998004	0.998004	0.998004	0.998004	0.998004	0.998004	0.998004	0.998004	1.258715	1.041361
	Mean	0.998004	102.4173	9.11799	1.146516	0.998937	4.299516	0.998015	3.641636	7.250965	9.719971	12.79206	9.653150	7.347187
	Worst	0.998004	405.2031	17.37441	3.968250	1.015551	11.10997	0.998115	12.67051	12.67051	79.91903	35.72127	28.69522	18.30431
	Std	1.49E-12	123.4429	5.634068	0.664167	0.003916	2.961230	3.02E-05	4.014234	4.619824	17.10008	8.436467	7.765916	4.859278
	Median	0.998004	55.16649	7.873993	0.998004	0.998004	3.48017	0.998004	1.990054	7.856836	4.920634	12.19472	7.437787	6.187125
	Rank	1	13	9	4	3	6	2	5	7	11	12	10	8
F15	Best	0.000307	0.010107	0.009258	0.000307	0.000429	0.001664	0.000308	0.000307	0.000339	0.000667	0.001509	0.000785	0.000779
	Mean	0.000307	0.198659	0.065743	0.000310	0.000634	0.052038	0.000694	0.004374	0.000929	0.121847	0.016151	0.013766	0.020712
	Worst	0.000307	0.638512	0.129697	0.000358	0.000852	0.192500	0.001224	0.020363	0.001675	0.663833	0.080225	0.033322	0.114123
	Std	2.40E-10	0.166631	0.040713	1.13E-05	0.000113	0.058961	0.000446	0.008205	0.000573	0.160896	0.018730	0.011111	0.026869
	Median	0.000307	0.150550	0.057178	0.000307	0.000637	0.031958	0.000409	0.000308	0.000830	0.061455	0.009916	0.011219	0.012846
	Rank	1	13	11	2	3	10	4	6	5	12	8	7	9
F16	Best	-1.031628	-0.512665	-1.031628	-1.031628	-1.031627	-0.995524	-1.031628	-1.031628	-1.031628	-1.031628	-1.031628	-1.031628	-1.031628
	Mean	-1.031628	1.152982	-1.03183	-1.031628	-1.031628	-0.183919	-1.031628	-1.031628	-1.031628	0.354101	-0.950206	-0.761882	-1.031478
	Worst	-1.031628	10.13712	-0.796682	-1.031628	-1.031512	0.976726	-1.031628	-1.031596	-1.031617	11.55265	-0.215448	2.104271	-1.029111
	Std	2.28E-16	2.317786	0.058396	1.77E-11	2.92E-05	0.442691	1.78E-10	7.18E-06	2.81E-06	2.835103	0.242787	0.702948	0.000562
	Median	-1.031628	0.545565	-1.030835	-1.031628	-1.031603	-0.126042	-1.031628	-1.0316284	-1.0316273	-0.577368	-1.031221	-0.991580	-1.0316228
	Rank	1	13	8	2	6	11	3	4	5	12	9	10	7
F17	Best	0.397887	0.487072	0.397887	0.397887	0.397897	0.405886	0.397887	0.397887	0.397888	0.398691	0.397887	0.397891	0.397887
	Mean	0.397887	1.507978	0.691497	0.397887	0.397973	0.909183	0.397887	0.397888	0.397972	0.725016	0.582485	0.621624	0.512006
	Worst	0.397887	4.545591	2.605443	0.397887	0.398103	2.986574	0.397889	0.397889	0.398279	2.159561	1.505474	1.675738	1.098858
	Std	0	1.125269	0.582648	1.72E-11	7.42E-05	0.628445	2.89E-07	3.31E-07	0.000107	0.529513	0.280976	0.359983	0.210156
	Median	0.397887	1.170289	0.507903	0.397887	0.397945	0.622657	0.397887	0.397887	0.397913	0.495604	0.404889	0.447152	0.403133
	Rank	1	13	10	2	6	12	3	4	5	11	8	9	7
F18	Best	3	7.806245	3	3	3.000003	3.126392	3	3	3.000016	3	3	3.002059	3
	Mean	3	82.28232	11.82858	4.350001	3.000295	58.16920	3	3.000005	9.884609	30.41499	16.63737	21.06747	3.328216
	Worst	3	712.5911	30.26051	30	3.000843	209.0720	3	3.000025	32.68669	168.6706	85.22013	84.00261	8.407305
	Std	3.59E-17	151.5299	12.30680	6.037383	0.000263	47.24831	1.59E-08	3.86E-06	12.24619	49.87639	21.33369	21.71547	1.209836
	Median	3	41.51896	4.473675	3	3.000227	41.42558	3	3.000003	3.000210	4.750919	4.481357	10.29079	3.000182
	Rank	1	13	8	6	4	12	2	3	7	11	9	10	5
F19	Best	-3.862782	-3.793981	-3.862589	-3.862780	-3.862775	-3.812490	-3.862782	-3.862781	-3.862663	-3.850615	-3.862625	-3.856883	-3.862589
	Mean	-3.862782	-3.137669	-3.732506	-3.862758	-3.862276	-3.394596	-3.860822	-3.862363	-3.724638	-3.436009	-3.759531	-3.698561	-3.835177
	Worst	-3.862782	-2.393020	-3.864785	-3.862708	-3.860893	-2.658400	-3.854900	-3.854900	-3.088922	-2.520454	-2.612884	-3.255513	-3.763538
	Std	2.24E-15	0.422992	0.173115	1.84E-05	0.000467	0.334917	0.003483	0.001757	0.227636	0.395811	0.278613	0.149061	0.025889
	Median	-3.862782	-2.981781	-3.779020	-3.862763	-3.862422	-3.481803	-3.862782	-3.862776	-3.769903	-3.559263	-3.846661	-3.755599	-3.838827
	Rank	1	13	8	2	4	12	5	3	9	11	7	10	6
F20	Best	-3.321995	-2.476570	-3.284312	-3.321995	-3.315847	-2.648721	-3.321993	-3.321994	-3.159048	-3.133589	-3.318064	-3.140460	-3.168183
	Mean	-3.321995	-1.606979	-2.565607	-3.321995	-3.294591	-1.482950	-3.155027	-3.270576	-2.799961	-2.208091	-2.919373	-2.165272	-2.737259
	Worst	-3.321995	-0.800500	-1.665721	-3.321994	-3.263076	-0.501667	-2.433371	-3.137362	-1.970422	-1.004817	-2.265119	-0.917902	-2.008987
	Std	1.92E-10	0.557494	0.448478	5.65E-08	0.015664	0.561892	0.226915	0.066069	0.384861	0.645788	0.274611	0.705843	0.283780
	Median	-3.321995	-1.616324	-2.568614	-3.321995	-3.296864	-1.560620	-3.202446	-3.321991	-2.898671	-2.090042	-2.878028	-2.194108	-2.756116
	Rank	1	12	9	2	3	13	5	4	7	10	6	11	8
F21	Best	-10.15319	-0.947665	-10.053949	-10.15319	-10.10288	-2.330235	-10.15318	-10.15318	-10.15277	-10.14568	-9.539045	-8.823285	-10.12089
	Mean	-10.15319	-0.474447	-2.938451	-9.898299	-9.922329	-0.686834	-7.489689	-9.647838	-10.10618	-3.752431	-3.107848	-2.294095	-4.321114
	Worst	-10.15319	-0.231553	-0.947575	-5.055197	-9.584875	-0.265156	-2.630461	-5.100518	-9.926904	-0.312524	-0.388097	-0.667562	-1.200437
	Std	2.08E-08	0.197117	2.573645	1.139948	0.143849	0.432882	2.783702	1.555123	0.070842	3.830217	2.392085	1.892052	2.760156
	Median	-10.15319	-0.403357	-2.138653	-10.15319	-9.953860	-0.567232	-7.626722	-10.15308	-10.13640	-1.771617	-2.605009	-1.683282	-2.675039
	Rank	1	13	10	4	3	12	6	5	2	8	9	11	7
F22	Best	-10.40294	-1.143041	-4.283729	-10.40294	-10.34770	-1.402907	-10.40292	-10.40289	-10.40286	-10.40215	-6.972991	-7.082730	-10.40293
	Mean	-10.40294	-0.615014	-2.268076	-10.40293	-10.20155	-0.819434	-8.168849	-10.40275	-10.38348	-5.095959	-3.145143	-2.176823	-4.779447
	Worst	-10.40294	-0.350415	-0.710863	-10.40293	-9.990956	-0.533436	-2.765893	-10.40263	-10.40263	-0.346282	-0.820175	-0.808249	-1.500046
	Std	6.30E-08	0.235759	0.997142	9.66E-07	0.105181	0.221840	2.851848	7.14E-05	0.024507	4.217945	1.602754	1.485080	3.326424
	Median	-10.40294	-0.550333	-2.208331	-10.40293	-10.21704	-0.764227	-10.40266	-10.40277	-10.39087	-4.556371	-2.671672	-1.653202	-2.748702
	Rank	1	13	10	2	5	12	6	3	4	7	9	11	8
F23	Best	-10.53640	-1.415171	-8.752157	-10.53640	-10.49096	-1.923687	-10.53639	-10.53637	-10.53598	-8.421391	-10.22721	-5.105723	-9.436129
	Mean	-10.53640	-0.764194	-3.189776	-10.53640	-10.31084	-1.086056	-7.447693	-9.997831	-10.47502	-1.812456	-3.03499	-2.784114	-4.228680
	Worst	-10.53640	-0.492842	-1.123462	-10.53640	-9.950617	-0.670071	-2.421728	-5.128480	-10.18443	-0.626480	-1.09167	-1.227906	-1.356675
	Std	4.05E-08	0.236910	2.104581	6.87E-07	0.157184	0.418815	3.618764	1.657244	0.081606	1.807091	2.137244	1.027362	2.503640
	Median	-10.53640	-0.706918	-2.348719	-10.53640	-10.35942	-0.898986	-10.53613	-10.53626	-10.50219	-1.245496	-2.276028	-2.400801	-2.840285
	Rank	1	13	8	2	4	12	6	5	3	11	9	10	7
Sum Rank		10	129	91	28	41	112	42	42	54	104	86	99	64
Mean Rank		1	12.9	9.1	2.8	4.1	11.2	4.2	4.2	5.4	10.4	8.6	9.9	7.111111
Total Rank		1	12	8	2	3	11	4	4	5	10	7	10	6

TABLE S4: Evaluation Results of IEEE CEC2017 Functions F1, F3-15

CEC2017	SLIM (Ours)	GA	TLBO	DTBO	WO	GSA	WOA	GWO	AVOA	RSA	MPA	TSA	MVO	
F1	Best	100	1.27E+10	2.64E+09	204.4230	2.91E+08	4.25E+09	9688.367	3190.032	2.33E+08	8.44E+08	1.03E+09	6.77E+08	1.92E+09
	Mean	100.0037	1.81E+10	8.25E+09	2.42E+08	5.66E+08	1.36E+10	43492.46	8251.137	4.13E+09	1.44E+10	3.35E+09	3.01E+09	4.54E+09
	Worst	100.0325	2.49E+10	1.41E+10	1.89E+09	1.04E+09	2.01E+10	139725.9	13450.16	9.98E+09	2.13E+10	7.42E+09	6.83E+09	7.85E+09
	Std	0.008589	3.56E+09	3.56E+09	5.92E+08	2.12E+08	4.36E+09	34211.79	3426.593	2.48E+09	5.20E+09	1.92E+09	1.96E+09	1.88E+09
	Median	100.0002	1.81E+10	8.62E+09	4579.134	4.91E+08	1.47E+10	32502.08	7949.481	3.44E+09	1.56E+10	2.99E+09	2.58E+09	3.91E+09
	Rank	1	13	10	4	5	11	3	2	8	12	7	6	9
F3	Best	300	59113.45	9461.451	318.1151	3333.072	24792.29	304.4069	303.1062	5028.316	18746.21	28303.40	11796.38	13605.47
	Mean	300	7.56E+06	49948.04	2794.459	6084.239	2.12E+06	770.3236	2262.617	13148.29	47384.33	50560.65	39308.86	40427.59
	Worst	300	1.18E+08	97963.37	8768.471	9480.158	3.06E+06	4381.002	8178.141	21618.85	105849.1	81935.83	99463.81	94111.51
	Std	0	2.26E+07	25061.08	2283.564	1640.940	6.87E+06	965.4251	2386.754	5082.816	21603.17	16316.68	28235.39	21491.01
	Median	300	50220.2	42885.30	1942.984	6122.174	68178.21	413.1415	1191.075	12586.67	42905.71	48216.36	27580.71	40284.02
	Rank	1	13	10	4	5	12	2	3	6	9	11	7	8
F4	Best	400.0875	756.5428	588.4670	400.1595	437.5420	876.6112	406.6627	402.3008	485.0768	626.5882	458.3507	423.4799	468.9709
	Mean	405.4693	3349.723	1614.048	436.2634	473.0659	2557.092	424.8377	420.8356	1038.245	2368.264	764.2666	648.7659	854.3521
	Worst	407.8687	7251.289	3797.165	494.2800	503.3187	6804.745	490.4231	479.4110	2679.580	6439.764	1426.494	1182.615	1777.489
	Std	2.559662	1826.845	763.1628	33.23051	18.19437	1209.381	29.52068	23.81766	481.5181	1925.575	275.4506	182.8586	361.9497
	Median	406.6921	2865.113	1616.232	428.7633	474.8562	2220.971	408.0421	407.8172	976.8222	1282.716	638.3888	593.2958	724.2688
	Rank	1	13	10	4	5	12	3	2	9	11	7	6	8
F5	Best	505.9342	588.6722	561.2297	514.2496	584.2658	608.4342	511.3937	505.1669	522.3001	589.5887	581.9217	586.4873	547.5933
	Mean	515.9873	674.5490	596.5718	551.5432	545.5465	649.5883	529.7106	516.1313	582.8276	599.9794	583.5096	564.2245	574.1770
	Worst	528.8588	726.9212	636.8965	594.5274	558.7818	692.4634	554.6272	581.6588	616.8316	661.8914	631.0520	629.9846	605.6160
	Std	5.916559	32.74667	21.18589	19.43645	7.700472	24.84347	12.20282	7.645171	24.58211	31.66729	26.42915	23.35831	18.93120
	Median	514.9118	676.0080	594.0754	550.5779	544.9059	655.0066	525.6239	515.7626	583.7682	595.1261	583.8449	558.2233	570.9014
	Rank	1	13	10	5	4	12	3	2	8	11	9	6	7
F6	Best	600	671.1666	629.8350	606.3581	611.8569	647.3756	601.8657	600.0634	625.2837	631.3945	621.9098	619.2784	623.3179
	Mean	600.8818	705.4686	658.7701	630.8918	619.7115	672.6082	612.5968	601.2630	647.6402	676.8939	649.0311	646.8163	637.5159
	Worst	601.9962	731.9220	709.5006	649.0595	625.7598	694.7597	650.9605	604.0725	686.7138	717.8917	682.1448	670.8850	650.3282
	Std	0.660834	16.59312	16.34765	10.98085	2.929474	13.64859	13.01749	1.217879	14.56082	24.35930	15.87863	15.71918	7.739687
	Median	600.7772	707.2221	655.5775	631.1724	619.6871	673.7022	607.1893	601.0452	646.2126	680.7191	646.4565	649.2722	638.4443
	Rank	1	13	10	5	4	11	3	2	8	12	9	7	6
F7	Best	712.4407	1000.335	790.6003	760.4647	742.8571	895.0422	720.9857	713.5826	774.3911	754.8983	794.2987	740.0736	737.7722
	Mean	731.2051	1229.873	837.5036	786.7747	763.1733	1050.972	749.1089	733.3777	818.3293	1031.497	899.5162	828.6306	772.4694
	Worst	745.0437	1356.671	906.3227	812.3742	775.9102	1166.122	802.3250	754.1842	850.8865	1356.833	1062.564	903.7542	809.4977
	Std	8.267754	108.9583	32.44209	15.20125	7.662889	74.29233	20.10698	11.20568	26.06111	222.3642	67.87601	46.56896	19.74777
	Median	731.1467	1263.117	832.2375	786.9451	764.3622	1032.595	743.4408	731.2830	824.8339	1069.966	896.2424	832.5518	778.1956
	Rank	1	13	9	6	4	12	3	2	7	11	10	8	5
F8	Best	805.9697	902.2077	838.6110	812.7232	829.4792	892.2879	810.2949	805.4629	830.5109	827.5776	826.7661	822.4106	817.1971
	Mean	811.6908	947.6045	874.6842	825.1430	836.7712	922.7039	829.2462	816.7258	859.5798	890.4903	871.5855	856.8187	847.3238
	Worst	815.9194	994.8969	904.3993	837.8098	846.5649	944.2576	857.7463	828.5758	883.2863	944.5663	915.2670	897.2271	871.2717
	Std	3.110942	21.17952	16.04682	6.588697	4.086373	16.47357	13.23074	7.644122	15.67515	42.17564	24.68951	19.26057	12.80849
	Median	812.4373	949.6814	873.7321	824.5422	836.6125	927.4065	825.6624	817.2970	860.6272	895.0468	868.1479	852.8728	846.4858
	Rank	1	13	10	3	5	12	4	2	8	11	9	7	6
F9	Best	900	4149.901	1256.994	1108.308	937.7673	1905.626	901.3649	900.1243	1110.779	1061.599	1734.585	1135.726	1000.074
	Mean	908.2654	6305.166	1893.727	1318.405	980.4373	3375.268	1001.275	927.0847	1663.738	3345.918	2451.965	1841.928	1263.954
	Worst	932.7962	8521.633	2698.708	1568.935	1039.719	4971.737	1585.317	972.2555	2507.122	5836.716	3639.967	4206.986	2435.465
	Std	10.12445	1197.948	446.0171	136.7297	23.78228	777.5579	142.5873	29.72119	327.4182	1378.836	523.7769	738.3814	309.6381
	Median	904.3668	6022.168	1893.924	1343.643	982.4396	3443.139	969.6820	911.1474	1584.479	3409.628	2421.412	1651.052	1193.759
	Rank	1	13	9	6	3	12	4	2	7	11	10	8	5
F10	Best	1349.221	3526.124	2676.969	1137.055	2123.127	2733.703	1388.666	1131.715	2002.830	2285.731	2064.026	1859.437	1828.649
	Mean	1633.282	3911.556	3056.869	1828.845	2350.167	3488.636	1838.561	1568.186	2705.358	2799.348	2654.317	2578.917	2629.356
	Worst	1905.896	4347.014	3708.255	2104.207	2608.125	3949.634	2372.269	2233.700	3089.348	3298.184	3054.170	3069.275	3070.204
	Std	179.6307	234.8325	264.4264	202.3913	151.4347	277.9706	273.6980	347.1743	275.9949	240.8775	251.0655	318.6558	278.8034
	Median	1625.200	3956.379	3025.160	1885.477	2359.998	3516.043	1827.433	1471.290	2725.149	2799.639	2693.269	2619.887	2650.887
	Rank	2	13	11	3	5	12	4	1	9	10	8	6	7
F11	Best	1102.101	3468.932	1726.748	1125.611	1148.002	2567.303	1113.926	1107.106	1257.142	1839.759	1411.834	1233.549	1878.744
	Mean	1119.961	47675.93	6066.416	1194.027	1180.949	39055.64	1187.454	1148.936	3772.458	25428.01	6285.993	4598.233	6408.330
	Worst	1158.743	217512.7	19291.57	1373.512	1233.779	274602.3	1345.958	1268.639	23594.23	290875.9	29026.96	13787.56	24975.68
	Std	13.85671	58200.51	4382.583	86.36352	23.21626	62697.23	78.93589	44.17845	5055.359	45062.57	7502.651	4334.433	5894.790
	Median	1117.916	25714.95	4991.951	1156.365	1177.926	15142.74	1156.922	1133.402	1692.330	11470.69	2712.171	2306.485	5051.850
	Rank	1	13	8	5	3	12	4	2	6	11	9	7	10
F12	Best	2627.026	1.17E+09	1.89E+06	29474.73	644357.5	4.28E+08	41557.35	10121.50	4.17E+06	857507.2	3.52E+06	3.40E+06	516360.4
	Mean	4585.208	2.49E+09	5.61E+08	1.62E+06	3.01E+06	2.06E+09	1.79E+06	1.29E+06	1.51E+08	1.59E+09	8.85E+07	2.11E+08	6.56E+07
	Worst	6691.075	4.24E+09	3.42E+09	2.95E+06	5.25E+06	5.79E+09	4.19E+06	6.08E+06	7.80E+08	5.47E+09			

TABLE S5: Evaluation Results of IEEE CEC2017, F16-F30

CEC2017		SLIM(Ours)	GA	TLBO	DTBO	WO	GSA	WOA	GWO	AVOA	RSA	MPA	TSA	MVO
F16	Best	1602.029	2042.143	1939.488	1735.782	1651.211	2159.974	1633.329	1628.767	1825.583	2001.652	1872.105	1883.341	1775.967
	Mean	1683.013	2727.119	2201.640	1915.052	1783.078	2558.842	1779.489	1790.267	2095.081	2470.232	2171.866	2191.715	2064.718
	Worst	1847.833	3293.127	2455.827	2115.462	1867.114	2872.530	1991.124	1991.319	2392.645	2833.971	2705.048	2551.688	2307.363
	Std	83.69463	286.0399	141.0687	94.23818	63.74776	207.0761	109.6009	118.5015	150.7663	273.4834	197.8917	214.8621	168.8730
	Median	1657.193	2692.483	2201.666	1920.723	1785.017	2593.754	1756.409	1749.671	2075.580	2510.237	2159.596	2178.379	2102.651
F17	Rank	1	13	10	5	3	12	2	4	7	11	8	9	6
	Best	1709.119	2117.615	1786.752	1743.149	1744.099	1871.129	1730.899	1738.765	1766.484	1784.672	1769.915	1763.704	1758.339
	Mean	1739.258	2503.755	1927.507	1771.391	1769.091	2247.315	1779.332	1768.611	1840.346	2099.527	1992.910	1940.926	1877.021
	Worst	1754.275	2879.627	2251.935	1830.166	1793.075	2628.293	1880.779	1858.367	2017.858	2446.441	2280.436	2237.555	2136.039
	Std	11.90406	220.3576	123.6762	18.43479	15.17561	211.0407	41.28105	29.54163	86.17080	229.8419	158.1143	138.8919	121.0284
F18	Median	1741.931	2556.809	1902.857	1771.526	1772.686	2177.256	1766.873	1754.978	1802.197	2158.176	1943.593	1941.104	1826.366
	Rank	1	13	8	4	3	12	5	2	6	11	10	9	7
	Best	1852.994	4.92E+07	20450.14	2727.781	3266.764	8.14E+07	2104.776	3594.891	2682.031	6598.891	2752.295	9131.607	6373.064
	Mean	5246.319	1.12E+09	3.74E+08	14352.58	45492.85	1.31E+09	19664.19	22042.43	3.63E+06	3.29E+08	52507.32	1.46E+08	9.22E+07
	Worst	7484.057	3.16E+09	2.59E+09	34296.76	135881.3	5.34E+09	47238.25	40157.13	7.23E+07	1.77E+09	478510.7	1.28E+09	3.92E+08
F19	Std	1169.189	1.04E+09	6.10E+08	11317.64	37983.98	1.51E+09	14258.59	13651.09	1.61E+07	4.86E+08	102698.2	2.96E+08	1.50E+08
	Median	5855.857	6.73E+08	8.39E+07	9748.051	28452.51	7.89E+08	23003.86	18685.09	20342.03	1.16E+08	23067.77	6.74E+06	8.42E+06
	Rank	1	12	11	2	5	13	3	4	7	10	6	9	8
	Best	1909.301	164768.9	3656.314	1590.894	2226.784	7557.127	2139.901	1916.888	2400.114	3166.557	2162.963	2095.238	5647.459
	Mean	2289.244	1.18E+08	3.08E+07	9157.068	3076.219	4.23E+07	17008.06	6433.968	2.21E+06	1.00E+07	39690.84	50164.0	455170.2
F20	Worst	3628.730	1.04E+09	2.67E+08	20257.88	6758.424	2.45E+08	29062.72	16282.68	4.27E+07	8.12E+07	425451.9	4.48E+06	4.02E+06
	Std	451.7916	2.32E+08	6.62E+07	6426.164	1077.168	7.28E+07	7174.158	5745.359	9.54E+06	2.01E+07	93860.91	1.21E+06	1.07E+06
	Median	2072.117	4.67E+07	3.37E+06	8004.330	2694.017	964182.5	15557.30	2513.379	15112.79	1.31E+06	10845.65	22409.58	51352.15
	Rank	1	13	11	4	2	12	5	3	9	10	6	8	7
	Best	2000.995	2419.042	2136.166	2036.744	2064.002	2204.955	2022.056	2027.900	2061.316	2060.114	2043.009	2127.778	2084.186
F21	Mean	2017.308	2622.379	2309.355	2144.339	2086.886	2400.171	2077.604	2099.344	2201.085	2333.276	2248.672	2309.277	2244.720
	Worst	2042.571	2868.509	2594.442	2232.140	2109.364	2570.501	2175.864	2287.318	2304.577	2560.577	2514.778	2562.426	2392.423
	Std	11.46354	124.0847	127.8020	59.43859	11.78101	93.46371	43.93133	74.62701	64.36849	154.8715	119.7986	131.7305	89.05507
	Median	2022.058	2660.989	2281.945	2152.341	2087.269	2383.205	2062.259	2059.466	2219.906	2362.345	2244.259	2293.997	2225.372
	Rank	1	13	10	5	3	12	2	4	6	11	8	9	7
F22	Best	2200	2366.928	2358.759	2202.498	2210.173	2340.699	2203.109	2229.344	2324.541	2264.747	2292.766	2238.099	2280.744
	Mean	2201.616	2460.463	2401.201	2255.676	2218.789	2419.452	2266.849	2319.483	2384.509	2406.576	2371.417	2358.965	2363.836
	Worst	2219.011	2524.688	2444.554	2346.567	2229.313	2506.099	2349.552	2342.130	2425.294	2488.314	2438.967	2425.570	2403.803
	Std	4.191169	38.25400	24.96385	51.42198	4.412836	40.50383	64.44499	23.40935	24.23632	55.78349	29.45614	44.67864	28.01748
	Median	2200.323	2460.952	2400.968	2232.681	2218.597	2417.649	2257.510	2319.418	2383.912	2410.099	2376.665	2360.896	2368.979
F23	Rank	1	13	10	3	2	12	4	5	9	11	8	6	7
	Best	2300	3076.524	2626.483	2301.490	2330.572	3028.213	2302.876	2300.872	2464.498	2604.445	2356.808	2411.482	2392.892
	Mean	2306.527	4374.578	3086.551	2327.505	2361.241	3843.843	2307.097	2311.441	2682.063	3633.883	2788.546	2719.566	2941.143
	Worst	2313.958	5208.756	3709.789	2440.009	2393.816	5004.413	2318.236	2330.330	3061.198	4918.589	3583.184	3958.578	4486.762
	Std	3.442365	582.9957	304.1502	37.93825	15.68615	467.6498	3.817723	8.466158	191.2151	643.1402	333.7609	348.1995	551.3847
F24	Median	2306.327	4426.193	3045.799	2313.392	2357.145	3917.434	2307.020	2308.579	2602.946	3691.319	2758.069	2621.585	2748.417
	Rank	1	13	10	4	5	12	2	3	6	11	8	7	9
	Best	2602.111	2732.552	2728.638	2630.409	2654.616	2742.584	2611.339	2603.165	2668.495	2710.886	2658.698	2643.95	2684.856
	Mean	2609.492	2847.196	2865.755	2667.976	2674.745	2874.749	2629.955	2621.256	2759.004	2831.539	2699.700	2720.152	2795.655
	Worst	2612.565	3068.414	2965.013	2730.868	2686.246	2980.424	2652.903	2640.197	2915.587	2975.300	2829.255	2823.391	3045.092
F25	Std	2.523470	83.35855	70.56796	33.55469	8.741795	68.71320	9.541729	10.54667	66.40915	69.64781	38.22932	50.13470	80.97648
	Median	2609.720	2837.339	2857.545	2658.473	2676.984	2890.829	2630.785	2623.065	2750.947	2837.435	2695.717	2711.578	2794.758
	Rank	1	11	12	4	5	13	3	2	8	10	6	7	9
	Best	2500	2870.923	2846.658	2503.068	2557.609	2855.828	2744.604	2730.898	2660.989	2639.796	2758.472	2675.994	2691.603
	Mean	2517.552	3033.837	2975.756	2569.104	2581.103	3030.525	2760.923	2748.697	2862.466	3000.656	2826.888	2861.824	2902.343
F26	Worst	2735.644	3497.425	3111.607	2766.514	2709.327	3235.516	2785.299	2776.329	3018.552	3247.384	2906.696	2976.316	3044.769
	Std	54.41668	144.0163	72.20325	87.82799	33.36380	121.9996	9.752243	13.16528	72.00923	119.3368	41.76276	62.09139	89.99833
	Median	2500	2994.089	2965.650	2589.384	2572.857	3014.047	2758.925	2745.998	2878.834	3000.500	2827.227	2863.347	2889.193
	Rank	1	13	10	2	3	12	5	4	8	11	6	7	9
	Best	2897.991	3767.652	3042.664	2911.369	2917.483	3304.398	2902.628	2903.508	2965.609	2993.102	2960.819	3006.247	2979.709
F27	Mean	2920.038	4941.904	3474.973	2982.273	2965.409	4106.963	2938.309	2934.478	3206.043	4287.128	3198.024	3213.089	3206.640
	Worst	2950.992	6531.719	3938.952	3179.679	2990.823	5061.476	2960.308	2990.768	3904.442	7452.287	3844.917	4093.525	3556.344
	Std	21.42684	818.6345	252.9269	68.75186	17.03049	487.2060	17.22798	21.62239	231.5923	1306.091	224.3551	256.2196	161.6793
	Median	2916.763	5070.699	3496.033	2951.064	2970.485	4016.541	2947.405	2942.852	3150.817	4075.867	3160.011	3101.280	3183.659
	Rank	1	13	10	5	4	11	3	2	7	12	6	9	8
F28	Best	2600.074	4481.228	3579.212	2602.684	3006.999	3698.594	2815.428	2814.956	3233.386	3283.777	3190.413	3196.954	3468.893
	Mean	2843.183	5144.327	4374.962	3365.041	3144.757	4824.589	3058.038	30					

TABLE S6: Evaluation Results of Engineering Benchmark Problems

Engineering Problems		SLIM(Ours)	GA	TLBO	DTBO	WO	GSA	WOA	GWO	AVOA	RSA	MPA	TSA	MVO
Pressure Vessel Design	Best	5880.928	16249.67	9288.889	5901.785	7001.497	8156.114	5883.591	5883.944	6159.342	10042.73	6429.162	10847.3	10929.42
	Mean	5974.541	44680.71	24465.49	6385.272	7963.624	18096.08	6421.939	5985.673	9664.342	27083.74	10715.14	24132.49	17993.79
	Worst	6127.846	118308.8	36679.76	6743.241	8719.261	32605.14	7311.034	6466.947	15161.68	66977.97	22490.67	50891.81	30208.05
	Std	73.46460	27715.89	6801.638	217.5495	448.4098	6463.286	588.7512	173.7946	2619.674	17583.42	4184.994	11154.99	5542.683
	Median	5960.980	39304.66	23050.86	6384.935	7889.578	17997.45	6239.654	5914.159	9199.016	21360.54	9195.779	19898.77	16516.89
	Rank	1	13	11	3	5	9	4	2	6	12	7	10	8
Welded Beam	Best	1.473036	3.005859	2.700001	1.473165	1.515835	3.336589	1.475809	1.473865	1.485039	2.311597	1.611787	1.851635	2.224236
	Mean	1.473036	1.26E+08	4.838297	1.477494	1.901718	1.82E+07	1.501298	1.475671	2.312955	3.11E+07	3.074672	3.75E+07	3.686454
	Worst	1.473036	8.16E+08	7.484016	1.491305	2.189474	1.65E+08	1.747626	1.484104	3.385458	3.33E+08	5.206476	5.20E+08	6.112985
	Std	4.48E-09	2.13E+08	1.450761	0.005727	0.149081	4.27E+07	0.061445	0.002374	0.655739	8.38E+07	0.949504	1.25E+08	1.059997
	Median	1.473036	6.155955	4.675240	1.474663	1.890636	5.964467	1.483174	1.474690	2.289934	4.587174	2.861935	4.326107	3.420746
	Rank	1	13	9	3	5	10	4	2	6	11	7	12	8
String Design	Best	0.012036	0.020339	0.020914	0.012667	0.013247	0.026443	0.012668	0.012673	0.012868	0.014886	0.013688	0.034885	0.021933
	Mean	0.012667	4.94E+08	4.80E+08	0.013127	0.017709	2.44E+08	0.013286	0.012769	0.013976	3.91E+08	0.031981	2.92E+08	3.62E+08
	Worst	0.012768	9.70E+08	9.97E+08	0.013589	0.024111	4.78E+08	0.016717	0.013275	0.015904	9.94E+08	0.187558	9.61E+08	9.29E+08
	Std	0.000151	3.73E+08	4.32E+08	0.000282	0.002698	2.03E+08	0.001034	0.000146	0.000926	3.99E+08	0.037238	3.70E+08	4.11E+08
	Median	0.012704	5.10E+08	5.94E+08	0.013172	0.017334	2.59E+08	0.012746	0.012725	0.013699	3.18E+08	0.024208	4.88E+08	1.21E+08
	Rank	1	13	12	3	6	8	4	2	5	11	7	9	10
Three Bar Truss	Best	263.8958	265.3595	263.9009	263.8958	263.8984	264.9624	263.8959	263.8961	263.9020	263.8968	263.8962	264.3241	263.8959
	Mean	263.8959	282.2984	265.3907	263.8962	263.9106	274.1229	263.9044	263.8991	264.7474	268.4817	264.9090	270.6581	264.5009
	Worst	263.8963	315.7944	270.9587	263.8974	263.9389	282.8427	263.9318	263.9078	271.0137	284.4463	270.9577	282.9540	266.2201
	Std	0.000116	12.71869	2.251149	0.000426	0.009625	6.085770	0.009437	0.002862	2.145889	6.641144	1.596736	4.867632	0.710699
	Median	263.8959	281.6658	264.3413	263.8961	263.9071	274.7035	263.9008	263.8985	264.0022	265.5701	264.6626	270.8287	264.2849
	Rank	1	13	9	2	5	12	4	3	7	10	8	11	6
Gear Train Design	Best	0	3.14E-05	0	0	2.65E-12	1.40E-13	1.89E-17	9.52E-16	1.15E-14	1.48E-20	0	4.82E-19	0
	Mean	3.37E-16	0.007554	0.004705	0	1.16E-10	0.001409	1.07E-13	8.79E-13	5.47E-12	0.004472	7.45E-16	9.27E-15	0.001980
	Worst	5.34E-15	0.048392	0.038016	0	5.03E-10	0.014712	6.65E-13	3.45E-12	5.39E-11	0.023495	1.49E-14	6.84E-14	0.014399
	Std	1.20E-15	0.012752	0.009511	0	1.57E-10	0.003369	1.85E-13	1.06E-12	1.18E-11	0.006882	3.33E-15	1.58E-14	0.003917
	Median	1.78E-39	0.001687	0.000343	0	3.88E-11	1.48E-05	1.00E-14	5.17E-13	1.82E-12	0.001499	0	5.56E-15	1.89E-06
	Rank	2	13	12	1	8	9	5	6	7	11	3	4	10
Cantilever Beam	Best	1.339965	5.234791	4.178882	1.339958	1.575409	3.465988	1.340033	1.339975	1.498955	4.356971	1.904846	4.008062	4.445262
	Mean	1.340009	8.613523	7.633363	1.342466	2.784859	7.460303	1.340498	1.340017	1.683717	7.574240	3.203657	6.725761	7.429576
	Worst	1.340101	10.93972	9.620686	1.349983	3.913163	11.29435	1.341899	1.340077	1.916567	11.07049	5.613711	10.84004	10.81732
	Std	4.11E-05	1.652328	1.407990	0.004442	0.585616	2.083779	0.000413	3.11E-05	0.116308	2.078122	1.077071	1.671013	1.393546
	Median	1.339997	8.546408	7.952747	1.339968	2.911407	7.786088	1.340403	1.340013	1.660048	7.498067	3.134069	6.774822	7.493145
	Rank	1	13	12	4	6	10	3	2	5	11	7	8	9
Sum Rank		7	78	65	16	35	58	24	17	36	66	39	54	51
Mean Rank		1.166667	13	10.83333	2.666667	5.833333	9.666667	4	2.833333	6	11	6.5	9	8.5
Total Rank		1	13	11	2	5	10	4	3	6	12	7	9	8