Appendix

Data -set	9_stat MulPAA	DTW$_I$	DTW$_D$	WEASEL MUSE	MLSTM FCN	TapNet	Rocket MTS	MrSEQL
AWR	0.01	0.05	0.4	179.00	1.39	2.98	0.01	8.70
AF	0.62	2.28	0.4	0.25	0.81	0.00	0.13	0.28
BM	0.07	0.03	0.3	0.10	1.03	0.00	0.01	0.26
CT	0.58	7.35	2.51	121.38			0.34	23.04
CR	0.83			4.51	1.77	0.08		16.44
DDG	17.17	44.51	6.48		40.55	0.00	0.77	219.45
ER	1.07	60.49	35.2	0.09	0.85	0.00	0.77	0.16
EW	0.15	0.29	0.17		135.19		0.13	
EP	0.14	0.04	0.4	2.71	0.67	0.05	0.03	0.82
EC	8.40	11386	2769.3	72.02	2.87		14.65	31.07
FD	89.80	2339	272.13	514.00	66.12		5.49	
FM	0.92	0.27	0.1	0.52	2.22	0.01	0.08	4.11
HMD	4.98	72.46	8.42	28.35	0.93	0.47	0.63	14.34
HW	0.48	3.12	1.1	27.24	0.68	0.45	0.11	1.89
HB	0.37	1.17	0.58	287.93	5.70	4.80	0.09	42.97
IWB								150.92
JV	0.55			0.57				0.19
LSST	0.07	0.4	0.4	24.10	1.40	0.40	0.03	21.19
LIB	1.90	9.13	3.1	0.54	6.68	0.01	0.30	0.24
MI	22.80	2295	418		15.28		3.20	992.61
NTP	0.68	0.23	0.8	8.14	2.20	0.14	0.07	2.85
PSF	1.35	1	1.12		11.93	0.00	1.41	600.94
PD	8.44	1010.28	196.48	0.41	136.50	0.01	1.09	0.94
PS	37.03	156.33	21.33		11.48	0.00	1.78	1030.10
RS	0.16	0.04	0.3	0.31	0.68	0.01	0.02	0.26
SRS1	7.16			36.72	1.88			20.55
SRS2	1.23	39.5	15.1	45.73	1.95	0.76	0.49	22.99
SAD	1.20	47.57	15.43				0.70	119.29
SWJ	0.15	0.57	0.37	5.62	0.62	0.09	0.04	2.16
UW	0.30	1.32	1.04	9.59	0.68		0.14	1.87
Total time	208.62*	17478.43	3770.96	1369.83	452.08	10.26	32.51	3330.64

TABLE 4: Total training time in minutes for all compared methods on all the MTSC benchmark datasets where the method could complete training and prediction.

* All datasets can be run in parallel which will reduce time for computation to 89 minutes.

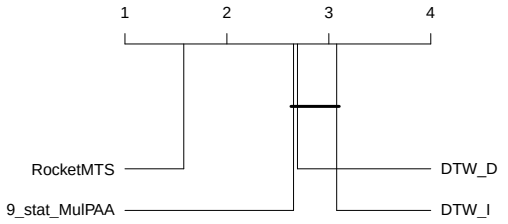

Figure 11: Comparison of mean rank classification accuracy for RocketMTS, 9_stat_MulPAA, DTW_I and DTW_D over 26 equal-length datasets. We note that on this expanded set of problems, ROCKET achieves a statistically significant difference to the baselines. All the other compared methods did not complete on all 26 datasets so were not included in this diagram. In terms of actual gap in accuracy between the compared methods: if we take DTW_D as the baseline over the 26 datasets, 9_stat_MulPAA has +2.7% and ROCKET has +19% difference in mean accuracy to DTW_D. This shows that the subset of datasets on which we compare these methods has a significant impact on the ranking and the gap in accuracy. Overall, ROCKET does seem to be ahead in accuracy as compared to all the other methods, over many different subsets of the MTSC archive. Also see Table 5 for more details regarding accuracy.

Data -set	4_stat	9_stat	Catch22	4_stat Window	9_stat Window	4_stat PAA	9_stat PAA	Catch22 PAA	9_stat MulPAA	DTW$_I$	DTW$_D$	WEASEL MUSE	MLSTM FCN	TapNet	Rocket MTS	MrSEQL SAX
AWR	0.65	0.93	0.98	0.94	0.93	0.92	0.93	0.96	0.99	0.98	0.99	0.99	0.79	0.97	0.99	0.99
AF	0.27	0.27	0.27	0.33	0.27	0.27	0.20	0.33	0.33	0.27	0.20	0.40	0.27	0.20	0.07	0.27
BM	0.95	1.00	1.00	0.93	1.00	0.95	1.00	0.98	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.95
CT	0.72	0.86	0.89	0.79	0.87	0.73	0.87	0.86	0.96			0.99				0.96
CR	0.79	1.00	0.97	0.96	0.93	0.97	0.97	0.96	0.99	0.99	1.00	0.98	0.82	0.93	1.00	0.99
DDG	0.60	0.62	0.36	0.50	0.48	0.50	0.66	0.46	0.58	0.48	0.58		0.54	0.52	0.52	0.34
ER	0.64	0.77	0.87	0.85	0.90	0.86	0.87	0.91	0.91	0.92	0.92	0.97	0.87	0.88	0.99	0.88
EW	0.42	0.68	0.83	0.79	0.85	0.54	0.64	0.82	0.66	0.60	0.62		0.71		0.91	
EP	0.93	0.96	0.90	0.96	1.00	0.87	0.93	0.94	0.97	0.98	0.96	0.99	0.80	0.96	0.99	0.99
EC	0.33	0.28	0.23	0.26	0.32	0.32	0.33	0.24	0.28	0.30	0.32	0.47	0.25		0.42	0.56
FD	0.54	0.54	0.54	0.57	0.57	0.55	0.55	0.58	0.56	0.51	0.53	0.63	0.55		0.64	
FM	0.53	0.46	0.54	0.54	0.48	0.54	0.46	0.58	0.54	0.52	0.53	0.55	0.56	0.44	0.51	0.56
HMD	0.28	0.22	0.26	0.28	0.26	0.31	0.28	0.27	0.31	0.29	0.19	0.37	0.34	0.39	0.45	0.15
HW	0.06	0.13	0.20	0.17	0.18	0.15	0.19	0.19	0.18	0.51	0.61	0.52	0.50	0.32	0.58	0.47
HB	0.73	0.80	0.73	0.76	0.77	0.76	0.76	0.71	0.77	0.66	0.72	0.71	0.66	0.55	0.75	0.73
IWB	0.64	0.65														0.10
JV	0.97	0.97	0.74	0.98		0.96	0.96	0.64	0.97			0.98				0.45
LSST	0.36	0.47	0.55	0.35	0.44	0.36	0.50	0.47	0.49	0.58	0.55	0.64	0.75	0.55	0.64	0.59
LIB	0.49	0.61	0.75	0.68	0.72	0.51	0.58	0.73	0.68	0.89	0.87	0.89	0.64	0.82	0.91	0.87
MI	0.46	0.50	0.49	0.47	0.49	0.50	0.52	0.57	0.47	0.01	0.50		0.51		0.58	0.51
NTP	0.84	0.78	0.86	0.84	0.83	0.79	0.80	0.74	0.90	0.85	0.88	0.91	0.96	0.91	0.88	0.87
PSF	0.77	0.79	0.90	0.77	0.80	0.79	0.82	0.86	0.82	0.73	0.71		0.99	0.80	0.84	0.96
PD	0.48	0.64	0.84	0.78	0.85	0.47	0.63	0.68	0.82	0.94	0.98	0.97	0.68	0.97	0.98	0.92
PS	0.07	0.10	0.15	0.13	0.16	0.07	0.09	0.12	0.16	0.15	0.15		0.27	0.13	0.27	0.26
RS	0.76	0.79	0.77	0.81	0.80	0.80	0.84	0.76	0.87	0.84	0.80	0.93	0.82	0.85	0.91	0.87
SRS1	0.80	0.72	0.59	0.92	0.83	0.84	0.72	0.72	0.77	0.77	0.78	0.70	0.87		0.86	0.68
SRS2	0.45	0.46	0.49	0.48	0.49	0.48	0.47	0.49	0.44	0.53	0.54	0.53	0.52	0.49	0.53	0.51
SAD	0.87	0.92	0.95	0.94		0.87	0.90		0.95							0.98
SWJ	0.47	0.27	0.40	0.33	0.40	0.13	0.27	0.40	0.33	0.33	0.20	0.27	0.33	0.33	0.53	0.33
UW	0.37	0.38	0.82	0.54	0.54	0.59	0.41	0.77	0.73	0.87	0.90	0.93	0.75		0.94	0.87
Wins/Ties	0	4	1	2	2	0	2	1	0	3	3	4	4	1	14	2
Completed	30	30	29	29	27	29	29	28	29	26	26	23	26	20	26	28

TABLE 5: Accuracy results of all compared methods on all the MTSC benchmark datasets where the method could complete training and prediction.