Time Series Representation Learning with Supervised Contrastive Temporal Transformer
Supplementary

I. DATASETS

A. UCR

Full details of UCR datasets are provided in Table I.

TABLE I: Details of datasets from UCR Archive

Datasets	#Train	#Test	Length	#Class	Type
Adiac	390	391	176	37	IMAGE
ArrowHead	36	175	251	3	IMAGE
Beef	30	30	470	5	SPECTRO
BeetleFly	20	20	512	2	IMAGE
BirdChicken	20	20	512	2	IMAGE
Car	60	60	577	4	SENSOR
CBF	30	900	128	3	SIMULATE
ChinaTown	20	345	24	2	TRAFFIC
ChlorCon	467	3840	166	3	SIMULATE
Coffee	28	28	286	2	SPECTRO
Crop	7200	16800	46	24	IMAGE
Diamond	16	306	345	4	IMAGE
DisPhaxOutAge	400	139	80	3	IMAGE
DisPhaxOutCor	600	276	80	2	IMAGE
DisPhaxTW	400	139	80	6	IMAGE
DodgerLoopWnd	20	138	288	2	SENSOR
Earthquakes	322	139	512	2	SENSOR
ECG200	100	100	96	2	ECG
ECG5000	500	4500	140	2	ECG
FaceAll	560	1690	131	14	IMAGE
FordA	3601	1320	500	2	SENSOR
GunPoint	50	150	150	2	MOTION
Ham	109	105	431	2	SPECTRO
Herring	64	64	512	2	IMAGE
InsecWing	220	1980	256	11	AUDIO
ItalyPowerDemand	67	1029	24	2	SENSOR
Lightning7	70	73	319	7	SENSOR
Meat	60	60	448	3	SPECTRO
MedicalImages	381	760	99	10	IMAGE
MelbournePedestrian	1194	2439	24	10	TRAFFIC
MiddlePhalanxOutAge	400	154	80	3	IMAGE
MiddlePhalanxTW	399	154	80	6	IMAGE
MoteStrain	20	1252	84	2	SENSOR
OliveOil	30	30	570	4	SPECTRO
Plane	105	105	144	7	SENSOR
PowerCon	180	180	144	2	DEVICE
ProximalPhalanxOutAge	400	205	80	3	IMAGE
ProximalPhalanxOutCor	600	291	80	2	IMAGE
ProximalPhalanxTW	400	205	80	6	IMAGE
SonyAISurface1	20	601	70	2	SENSOR
Strawberry	613	370	235	2	SPECTRO
SwedishLeaf	500	625	128	15	IMAGE
Wafer	1000	6164	152	2	SENSOR
Wine	57	54	234	2	SPECTRO
Yoga	300	3000	426	2	IMAGE

B. Time Series Classification

Full evaluation results on 45 UCR datasets are listed in Table II.

TABLE II: UCR Results (Accuracy)

Datasets	ST	Boss	HCOTE	TS-CHIEF	Rocket	ITime	SimCLR (modified)	TS2Vec	MLP	SCOTT (ours)
Adiac	0.7826	0.7647	0.8107	0.7980	0.7874	**0.8363**	0.6547	0.6572	0.5985	0.7775
ArrowHead	0.7371	0.8343	**0.8628**	0.8229	0.8051	0.8286	0.7943	0.8051	0.8171	0.8514
Beef	0.9000	0.8000	**0.9333**	0.7333	0.8333	0.7000	0.7667	0.7000	0.7667	0.9000
BeetleFly	0.9000	0.9000	0.9500	0.9500	0.9000	0.8500	0.8500	0.8500	0.7500	**1.0000**
BirdChicken	0.8000	**0.9500**	0.8500	0.9000	0.9000	**0.9500**	0.8000	0.8000	0.6000	0.8500
Car	**0.9167**	0.8333	0.8667	0.8500	0.8917	0.9000	0.8333	0.6833	0.7333	0.8667
CBF	0.9744	0.9978	0.9989	0.9978	**0.9999**	0.9989	0.8689	0.9933	0.8611	0.9456
ChinaTown	-	-	-	-	**1.0000**	-	0.9417	0.9796	0.9825	0.9854
ChlorineConcentration	0.6997	0.6609	0.7120	0.7206	0.8130	0.8753	0.7354	0.6938	0.6938	**0.8974**
Coffee	0.9643	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.8667	0.9643	0.9643	**1.0000**
Crop	-	-	-	-	0.7502	-	0.7545	0.7295	0.6951	**0.7680**
Diamond	0.9248	0.9314	0.9412	**0.9771**	0.9703	0.9314	0.9412	0.7778	0.9706	0.9706
DisPhaxOutAge	**0.7698**	0.7482	0.7626	0.7410	0.7574	0.7266	0.7194	0.7266	0.7194	**0.7698**
DisPhaxOutCor	0.7754	0.7283	0.7717	0.7862	0.7678	**0.7935**	0.7246	0.7862	0.7536	0.7790
DisPhaxTW	0.6619	0.6763	0.6835	0.6835	0.7187	0.6763	0.6835	0.6475	0.6906	**0.7266**
DodgerLoopWnd	-	-	-	-	0.9725	-	0.8116	0.9493	0.7391	**0.9855**
Earthquakes	0.7410	0.7482	0.7482	0.7482	0.7482	0.7410	0.7266	0.7482	0.7410	**0.7626**
ECG200	0.8300	0.8700	0.8500	0.8600	0.9060	0.9100	0.8500	0.8600	0.8200	**0.9400**
ECG5000	0.9438	0.9413	0.9462	0.9458	0.9470	0.9409	0.9422	0.9367	0.9058	**0.9478**
FaceAll	0.7787	0.7817	0.8030	0.8426	**0.9475**	0.8041	0.8148	0.7639	0.7598	0.8574
FordA	**0.9712**	0.9295	0.9644	0.9470	0.9449	0.9483	0.8023	0.9273	0.8333	0.9364
GunPoint	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.8367	0.9667	0.9067	0.9733
Ham	0.6857	0.6667	0.6667	0.7143	0.7257	0.7143	0.6762	0.6667	0.6952	**0.7428**
Herring	0.6719	0.5469	0.6875	0.5781	0.6858	0.7031	0.5938	0.6094	0.5469	**0.7344**
InsectWingbeatSound	0.6268	0.5232	0.6551	0.6465	**0.6566**	0.6348	0.6204	0.6318	0.6359	**0.6566**
ItalyPowerDemand	0.9475	0.9086	0.9631	0.9718	0.9691	0.9679	0.9417	0.9456	0.9602	**0.9738**
Lightning7	0.7260	0.6849	0.7397	0.7534	**0.8219**	0.8082	0.6986	0.7945	0.6575	0.7534
Meat	0.8500	0.9000	0.9333	0.9000	0.9450	0.9500	0.8667	0.8500	**0.9667**	**0.9667**
MedicalImages	0.6697	0.7184	0.7776	0.7974	0.7975	**0.7987**	0.7237	0.7789	0.6842	0.7434
MelbournePedestrian	-	-	-	-	0.9038	-	0.9524	0.9258	0.9020	**0.9725**
MiddlePhalanxOutAge	**0.6429**	0.5455	0.5974	0.5909	0.5955	0.5325	0.5844	0.6234	0.5844	0.5974
MiddlePhalanxTW	0.5195	0.5455	0.5714	0.5584	0.5558	0.5130	0.6169	0.5909	0.5779	**0.6234**
MoteStrain	0.8970	0.8786	0.9329	**0.9441**	0.9142	0.9034	0.8682	0.8618	0.8682	0.9105
OliveOil	0.9000	0.8667	0.9000	0.9000	0.9267	0.8667	0.8667	0.7000	0.7000	0.9333
Plane	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	0.9524	0.9810	0.9619	0.9905
PowerCon	-	-	-	-	0.9311	-	0.9274	0.9444	0.9833	**1.0000**
ProximalPhalanxOutAge	0.8439	0.8341	**0.8585**	0.8488	0.8551	0.8537	0.8341	0.8244	0.8537	**0.8585**
ProximalPhalanxOutCor	0.8832	0.8488	0.8797	0.8969	0.8990	**0.9313**	0.8763	0.8385	0.8625	0.8866
ProximalPhalanxTW	0.8049	0.8000	0.8146	0.8146	0.8161	0.7756	0.8098	0.7951	0.7756	**0.8195**
SonyAISurface1	0.8436	0.6323	0.7654	0.8270	**0.9241**	0.8835	0.7271	0.9101	0.6656	0.7854
Strawberry	0.9622	0.9757	0.9703	0.9676	0.9819	0.9838	0.8514	0.8649	0.9622	**0.9865**
SwedishLeaf	0.9280	0.9216	0.9536	0.9664	0.9659	**0.9712**	0.9104	0.8816	0.8464	0.9296
Wafer	**1.0000**	0.9948	0.9994	**1.0000**	0.9983	0.9987	0.9945	0.9956	0.9938	0.9968
Wine	0.7963	0.7407	0.7778	0.8889	0.8074	0.6667	0.8333	0.5000	0.5926	**0.9074**
Yoga	0.8177	0.9183	0.9177	0.8483	0.9085	0.9057	0.8457	0.7277	0.7587	0.8573
Total Best	7	5	6	6	9	10	0	0	1	**23**
Average Rank	5.9250	6.6625	4.1500	4.1625	3.2889	4.5250	7.1556	7.0667	7.5111	**2.9000**