

Supplementary Materials of "POND: Multi-Source Time Series Domain Adaptation with Information-Aware Prompt Tuning"

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More experimental results are demonstrated in the supplementary materials. Specifically, Tables 1 - 6 show the performance of all methods over 50 scenarios on four benchmark datasets.

Table 1. F1-score of the HAR dataset.

Scenario	Raincoat	CoDATs	Deep_Coral	MMDA	DIRT	DSAN	POND	Target Only
1-15 → 16	0.823 ± 0.094	0.767 ± 0.093	0.773 ± 0.082	0.679 ± 0.084	0.612 ± 0.135	0.738 ± 0.095	0.849 ± 0.021	0.856 ± 0.027
1-15 → 17	0.923 ± 0.017	0.870 ± 0.069	0.821 ± 0.063	0.763 ± 0.096	0.871 ± 0.090	0.942 ± 0.050	0.881 ± 0.026	0.962 ± 0.016
1-15 → 18	0.945 ± 0.008	0.941 ± 0.016	0.872 ± 0.039	0.832 ± 0.066	0.860 ± 0.031	0.777 ± 0.090	0.912 ± 0.017	0.906 ± 0.026
1-15 → 19	0.989 ± 0.020	0.975 ± 0.036	0.979 ± 0.035	0.993 ± 0.016	0.764 ± 0.165	0.991 ± 0.012	0.941 ± 0.009	0.988 ± 0.010
1-15 → 20	0.872 ± 0.142	0.932 ± 0.025	0.923 ± 0.023	0.921 ± 0.034	0.848 ± 0.101	0.929 ± 0.033	0.968 ± 0.021	0.983 ± 0.018
1-15 → 21	0.867 ± 0.141	0.903 ± 0.070	0.882 ± 0.028	0.974 ± 0.039	0.921 ± 0.090	0.909 ± 0.110	0.972 ± 0.021	1.000 ± 0.000
1-15 → 22	0.994 ± 0.014	0.955 ± 0.073	0.910 ± 0.063	0.994 ± 0.013	0.796 ± 0.144	0.996 ± 0.006	0.976 ± 0.018	0.997 ± 0.006
1-15 → 23	0.857 ± 0.167	0.907 ± 0.050	0.887 ± 0.029	0.887 ± 0.008	0.691 ± 0.121	0.895 ± 0.052	0.874 ± 0.021	0.926 ± 0.018
1-15 → 24	0.993 ± 0.008	0.959 ± 0.031	0.931 ± 0.039	0.987 ± 0.015	0.971 ± 0.040	0.968 ± 0.025	0.967 ± 0.011	1.000 ± 0.000
1-15 → 25	0.878 ± 0.208	0.922 ± 0.089	0.795 ± 0.085	0.868 ± 0.046	0.950 ± 0.027	0.914 ± 0.078	0.814 ± 0.017	0.941 ± 0.020
1-15 → 26	0.920 ± 0.166	0.989 ± 0.014	0.873 ± 0.062	0.986 ± 0.012	0.943 ± 0.067	0.948 ± 0.082	0.927 ± 0.018	0.997 ± 0.008
1-15 → 27	1.000 ± 0.000	0.985 ± 0.028	0.917 ± 0.061	0.973 ± 0.029	0.997 ± 0.007	0.992 ± 0.010	0.994 ± 0.011	0.980 ± 0.012
1-15 → 28	0.766 ± 0.107	0.775 ± 0.166	0.852 ± 0.044	0.778 ± 0.085	0.671 ± 0.175	0.783 ± 0.046	0.829 ± 0.018	0.853 ± 0.019
16-20 → 1	0.792 ± 0.072	0.744 ± 0.053	0.667 ± 0.077	0.654 ± 0.074	0.546 ± 0.060	0.698 ± 0.037	0.883 ± 0.017	0.986 ± 0.010
16-20 → 2	0.825 ± 0.048	0.821 ± 0.151	0.796 ± 0.055	0.651 ± 0.045	0.509 ± 0.050	0.652 ± 0.057	0.936 ± 0.017	0.943 ± 0.024
16-20 → 3	0.814 ± 0.028	0.746 ± 0.078	0.741 ± 0.058	0.657 ± 0.033	0.605 ± 0.056	0.565 ± 0.043	0.878 ± 0.018	0.978 ± 0.013
16-20 → 4	0.679 ± 0.084	0.605 ± 0.082	0.479 ± 0.110	0.513 ± 0.058	0.336 ± 0.110	0.436 ± 0.032	0.754 ± 0.033	0.921 ± 0.018
16-20 → 5	0.680 ± 0.054	0.634 ± 0.031	0.560 ± 0.112	0.564 ± 0.052	0.250 ± 0.087	0.439 ± 0.042	0.628 ± 0.021	0.853 ± 0.021
Overall	0.868	0.857	0.814	0.815	0.730	0.810	0.888	0.948

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Table 2. Accuracy of the HAR dataset.

Scenario	Raincoat	CoDATs	Deep_Coral	MMDA	DIRT	DSAN	POND	Target Only
1-15 → 16	0.821 ± 0.097	0.779 ± 0.088	0.794 ± 0.074	0.712 ± 0.064	0.660 ± 0.099	0.753 ± 0.091	0.844 ± 0.013	0.860 ± 0.015
1-15 → 17	0.919 ± 0.016	0.862 ± 0.073	0.827 ± 0.051	0.782 ± 0.082	0.868 ± 0.085	0.934 ± 0.049	0.921 ± 0.007	0.973 ± 0.000
1-15 → 18	0.943 ± 0.007	0.939 ± 0.014	0.875 ± 0.035	0.849 ± 0.053	0.865 ± 0.032	0.795 ± 0.072	0.931 ± 0.005	0.941 ± 0.012
1-15 → 19	0.993 ± 0.013	0.974 ± 0.041	0.981 ± 0.028	0.995 ± 0.011	0.876 ± 0.087	0.991 ± 0.013	0.939 ± 0.005	0.994 ± 0.004
1-15 → 20	0.880 ± 0.114	0.929 ± 0.025	0.922 ± 0.018	0.917 ± 0.035	0.880 ± 0.057	0.924 ± 0.035	0.974 ± 0.012	0.990 ± 0.008
1-15 → 21	0.872 ± 0.096	0.912 ± 0.060	0.871 ± 0.025	0.974 ± 0.040	0.937 ± 0.058	0.906 ± 0.103	0.975 ± 0.020	1.000 ± 0.000
1-15 → 22	0.996 ± 0.010	0.960 ± 0.060	0.938 ± 0.034	0.994 ± 0.013	0.875 ± 0.084	0.996 ± 0.007	0.988 ± 0.005	0.998 ± 0.004
1-15 → 23	0.856 ± 0.145	0.901 ± 0.051	0.882 ± 0.024	0.880 ± 0.007	0.770 ± 0.065	0.890 ± 0.051	0.902 ± 0.013	0.933 ± 0.009
1-15 → 24	0.994 ± 0.007	0.963 ± 0.030	0.938 ± 0.032	0.988 ± 0.016	0.969 ± 0.042	0.966 ± 0.026	0.978 ± 0.006	1.000 ± 0.000
1-15 → 25	0.887 ± 0.186	0.935 ± 0.069	0.793 ± 0.092	0.877 ± 0.046	0.949 ± 0.029	0.913 ± 0.080	0.864 ± 0.013	0.953 ± 0.013
1-15 → 26	0.924 ± 0.139	0.989 ± 0.014	0.895 ± 0.039	0.983 ± 0.014	0.946 ± 0.042	0.946 ± 0.073	0.951 ± 0.019	0.998 ± 0.003
1-15 → 27	1.000 ± 0.000	0.988 ± 0.025	0.939 ± 0.038	0.979 ± 0.022	0.997 ± 0.007	0.993 ± 0.010	0.997 ± 0.004	0.987 ± 0.005
1-15 → 28	0.776 ± 0.081	0.780 ± 0.134	0.844 ± 0.042	0.784 ± 0.056	0.708 ± 0.120	0.770 ± 0.043	0.856 ± 0.008	0.879 ± 0.005
16-20 → 1	0.797 ± 0.064	0.781 ± 0.038	0.712 ± 0.056	0.718 ± 0.050	0.650 ± 0.041	0.744 ± 0.024	0.908 ± 0.011	0.992 ± 0.006
16-20 → 2	0.836 ± 0.042	0.838 ± 0.141	0.814 ± 0.046	0.719 ± 0.029	0.606 ± 0.048	0.706 ± 0.059	0.946 ± 0.008	0.955 ± 0.015
16-20 → 3	0.820 ± 0.026	0.761 ± 0.068	0.756 ± 0.050	0.693 ± 0.024	0.652 ± 0.048	0.607 ± 0.035	0.910 ± 0.014	0.983 ± 0.009
16-20 → 4	0.709 ± 0.068	0.635 ± 0.071	0.504 ± 0.120	0.605 ± 0.053	0.441 ± 0.092	0.499 ± 0.037	0.804 ± 0.016	0.932 ± 0.014
16-20 → 5	0.683 ± 0.043	0.652 ± 0.038	0.586 ± 0.122	0.622 ± 0.054	0.363 ± 0.066	0.530 ± 0.044	0.707 ± 0.011	0.866 ± 0.028
Overall	0.873	0.865	0.826	0.837	0.778	0.826	0.911	0.957

Table 3. F1-Score of the WISDM dataset.

Scenario	Raincoat	CoDATs	Deep_Coral	MMDA	DIRT	DSAN	POND	Target Only
0-17 → 18	0.379 ± 0.061	0.384 ± 0.049	0.346 ± 0.023	0.297 ± 0.016	0.300 ± 0.041	0.287 ± 0.045	0.606 ± 0.020	0.705 ± 0.046
0-17 → 19	0.202 ± 0.029	0.210 ± 0.047	0.247 ± 0.016	0.216 ± 0.056	0.210 ± 0.049	0.128 ± 0.089	0.596 ± 0.036	0.719 ± 0.042
0-17 → 20	0.354 ± 0.040	0.368 ± 0.039	0.376 ± 0.031	0.452 ± 0.098	0.347 ± 0.071	0.269 ± 0.064	0.570 ± 0.023	0.704 ± 0.051
0-17 → 21	0.355 ± 0.057	0.310 ± 0.088	0.259 ± 0.018	0.250 ± 0.000	0.276 ± 0.055	0.245 ± 0.046	0.450 ± 0.026	0.636 ± 0.095
0-17 → 22	0.410 ± 0.032	0.412 ± 0.169	0.527 ± 0.071	0.443 ± 0.095	0.339 ± 0.074	0.287 ± 0.098	0.725 ± 0.031	0.651 ± 0.085
0-17 → 23	0.306 ± 0.015	0.327 ± 0.075	0.318 ± 0.031	0.327 ± 0.023	0.271 ± 0.016	0.277 ± 0.044	0.482 ± 0.017	0.538 ± 0.034
0-17 → 24	0.086 ± 0.052	0.060 ± 0.129	0.074 ± 0.139	0.074 ± 0.139	0.074 ± 0.139	0.074 ± 0.139	0.384 ± 0.021	0.456 ± 0.044
0-17 → 25	0.365 ± 0.030	0.540 ± 0.125	0.435 ± 0.043	0.436 ± 0.094	0.314 ± 0.107	0.353 ± 0.120	0.559 ± 0.050	0.672 ± 0.039
0-17 → 26	0.341 ± 0.036	0.412 ± 0.041	0.348 ± 0.019	0.340 ± 0.042	0.226 ± 0.065	0.363 ± 0.068	0.418 ± 0.036	0.582 ± 0.069
0-17 → 27	0.258 ± 0.130	0.205 ± 0.075	0.165 ± 0.084	0.214 ± 0.051	0.104 ± 0.064	0.200 ± 0.077	0.286 ± 0.040	0.549 ± 0.074
0-17 → 28	0.399 ± 0.028	0.431 ± 0.033	0.418 ± 0.032	0.454 ± 0.064	0.304 ± 0.044	0.339 ± 0.030	0.656 ± 0.046	0.689 ± 0.048
0-17 → 29	0.091 ± 0.030	0.076 ± 0.020	0.151 ± 0.071	0.107 ± 0.021	0.063 ± 0.035	0.056 ± 0.032	0.263 ± 0.018	0.512 ± 0.075
0-17 → 30	0.314 ± 0.020	0.305 ± 0.028	0.298 ± 0.023	0.359 ± 0.072	0.266 ± 0.035	0.246 ± 0.076	0.670 ± 0.039	0.791 ± 0.028
0-17 → 31	0.275 ± 0.002	0.330 ± 0.026	0.294 ± 0.062	0.324 ± 0.063	0.224 ± 0.068	0.194 ± 0.055	0.708 ± 0.042	0.752 ± 0.043
0-17 → 32	0.254 ± 0.017	0.314 ± 0.079	0.295 ± 0.045	0.268 ± 0.069	0.230 ± 0.017	0.275 ± 0.044	0.623 ± 0.053	0.775 ± 0.080
0-17 → 33	0.254 ± 0.023	0.262 ± 0.037	0.178 ± 0.039	0.267 ± 0.104	0.202 ± 0.062	0.237 ± 0.053	0.602 ± 0.040	0.671 ± 0.042
0-17 → 34	0.331 ± 0.024	0.273 ± 0.025	0.267 ± 0.019	0.271 ± 0.014	0.262 ± 0.026	0.255 ± 0.014	0.327 ± 0.041	0.758 ± 0.066
0-17 → 35	0.219 ± 0.002	0.250 ± 0.065	0.227 ± 0.015	0.292 ± 0.076	0.190 ± 0.048	0.166 ± 0.050	0.695 ± 0.035	0.789 ± 0.025
18-23 → 5	0.648 ± 0.001	0.558 ± 0.129	0.534 ± 0.102	0.510 ± 0.020	0.549 ± 0.097	0.484 ± 0.055	0.652 ± 0.035	0.734 ± 0.095
18-23 → 6	0.544 ± 0.074	0.565 ± 0.143	0.437 ± 0.078	0.543 ± 0.160	0.405 ± 0.089	0.454 ± 0.112	0.628 ± 0.033	0.872 ± 0.049
18-23 → 7	0.588 ± 0.070	0.404 ± 0.117	0.530 ± 0.094	0.477 ± 0.060	0.518 ± 0.12	0.476 ± 0.127	0.672 ± 0.029	0.888 ± 0.035
Overall	0.332	0.333	0.320	0.330	0.270	0.270	0.551	0.688

Table 4. Accuracy of the WISDM dataset.

Scenario	Raincoat	CoDATs	Deep_Coral	MMDA	DIRT	DSAN	POND	Target Only
0-17 → 18	0.738 ± 0.045	0.716 ± 0.056	0.670 ± 0.028	0.627 ± 0.046	0.563 ± 0.096	0.508 ± 0.059	0.747 ± 0.020	0.821 ± 0.033
0-17 → 19	0.440 ± 0.070	0.402 ± 0.074	0.415 ± 0.027	0.322 ± 0.074	0.373 ± 0.082	0.282 ± 0.100	0.719 ± 0.040	0.839 ± 0.022
0-17 → 20	0.667 ± 0.021	0.665 ± 0.047	0.675 ± 0.020	0.717 ± 0.099	0.630 ± 0.097	0.431 ± 0.128	0.733 ± 0.019	0.810 ± 0.026
0-17 → 21	0.490 ± 0.120	0.423 ± 0.150	0.298 ± 0.024	0.288 ± 0.000	0.340 ± 0.112	0.288 ± 0.064	0.556 ± 0.031	0.737 ± 0.070
0-17 → 22	0.707 ± 0.020	0.590 ± 0.212	0.663 ± 0.051	0.673 ± 0.076	0.542 ± 0.169	0.348 ± 0.099	0.853 ± 0.016	0.838 ± 0.034
0-17 → 23	0.682 ± 0.015	0.630 ± 0.163	0.615 ± 0.051	0.657 ± 0.024	0.605 ± 0.011	0.558 ± 0.065	0.632 ± 0.015	0.683 ± 0.026
0-17 → 24	0.184 ± 0.134	0.100 ± 0.211	0.106 ± 0.209	0.106 ± 0.209	0.106 ± 0.209	0.106 ± 0.209	0.656 ± 0.030	0.756 ± 0.041
0-17 → 25	0.608 ± 0.041	0.641 ± 0.078	0.677 ± 0.081	0.597 ± 0.080	0.500 ± 0.202	0.450 ± 0.156	0.704 ± 0.024	0.838 ± 0.025
0-17 → 26	0.614 ± 0.026	0.645 ± 0.039	0.539 ± 0.034	0.517 ± 0.071	0.434 ± 0.112	0.565 ± 0.068	0.667 ± 0.024	0.769 ± 0.029
0-17 → 27	0.428 ± 0.318	0.314 ± 0.204	0.322 ± 0.229	0.330 ± 0.116	0.320 ± 0.224	0.480 ± 0.204	0.594 ± 0.047	0.770 ± 0.061
0-17 → 28	0.721 ± 0.016	0.750 ± 0.027	0.726 ± 0.048	0.765 ± 0.029	0.630 ± 0.062	0.616 ± 0.078	0.791 ± 0.014	0.811 ± 0.028
0-17 → 29	0.073 ± 0.021	0.082 ± 0.032	0.253 ± 0.143	0.112 ± 0.022	0.070 ± 0.020	0.097 ± 0.036	0.257 ± 0.021	0.680 ± 0.036
0-17 → 30	0.691 ± 0.020	0.634 ± 0.045	0.603 ± 0.012	0.628 ± 0.023	0.563 ± 0.093	0.507 ± 0.091	0.826 ± 0.020	0.884 ± 0.012
0-17 → 31	0.694 ± 0.006	0.704 ± 0.021	0.610 ± 0.067	0.705 ± 0.031	0.543 ± 0.150	0.415 ± 0.110	0.849 ± 0.021	0.867 ± 0.022
0-17 → 32	0.603 ± 0.008	0.633 ± 0.065	0.613 ± 0.072	0.551 ± 0.104	0.580 ± 0.028	0.609 ± 0.043	0.764 ± 0.020	0.871 ± 0.045
0-17 → 33	0.559 ± 0.031	0.537 ± 0.085	0.361 ± 0.112	0.477 ± 0.087	0.388 ± 0.119	0.472 ± 0.137	0.746 ± 0.025	0.803 ± 0.021
0-17 → 34	0.800 ± 0.023	0.635 ± 0.100	0.629 ± 0.078	0.617 ± 0.044	0.614 ± 0.079	0.567 ± 0.044	0.575 ± 0.033	0.885 ± 0.024
0-17 → 35	0.507 ± 0.000	0.504 ± 0.108	0.507 ± 0.011	0.531 ± 0.035	0.405 ± 0.105	0.316 ± 0.116	0.728 ± 0.029	0.840 ± 0.019
18-23 → 5	0.895 ± 0.007	0.826 ± 0.091	0.784 ± 0.038	0.703 ± 0.047	0.806 ± 0.036	0.633 ± 0.082	0.783 ± 0.022	0.915 ± 0.013
18-23 → 6	0.775 ± 0.031	0.792 ± 0.068	0.608 ± 0.069	0.790 ± 0.076	0.607 ± 0.061	0.594 ± 0.117	0.683 ± 0.028	0.916 ± 0.022
18-23 → 7	0.769 ± 0.030	0.645 ± 0.083	0.669 ± 0.051	0.633 ± 0.081	0.752 ± 0.052	0.496 ± 0.126	0.771 ± 0.026	0.938 ± 0.011
Overall	0.602	0.565	0.540	0.540	0.494	0.445	0.697	0.822

Table 5. F1-score of HHAR and SSC datasets.

Scenario	Raincoat	CoDATs	Deep_Coral	MMDA	DIRT	DSAN	POND	Target Only
HHAR 0-6 → 7	0.765 ± 0.142	0.652 ± 0.108	0.815 ± 0.105	0.641 ± 0.050	0.649 ± 0.005	0.730 ± 0.164	0.834 ± 0.014	0.861 ± 0.016
HHAR 5-8 → 2	0.321 ± 0.023	0.347 ± 0.082	0.309 ± 0.032	0.216 ± 0.032	0.276 ± 0.021	0.314 ± 0.095	0.352 ± 0.014	0.881 ± 0.018
Overall	0.543	0.500	0.562	0.429	0.463	0.522	0.593	0.871
SSC 0-9 → 16	0.578 ± 0.028	0.510 ± 0.044	0.537 ± 0.024	0.559 ± 0.027	0.523 ± 0.019	0.515 ± 0.044	0.568 ± 0.012	0.601 ± 0.018
SSC 0-9 → 17	0.511 ± 0.024	0.413 ± 0.118	0.452 ± 0.077	0.504 ± 0.060	0.530 ± 0.053	0.463 ± 0.081	0.559 ± 0.006	0.602 ± 0.014
SSC 0-9 → 18	0.605 ± 0.016	0.548 ± 0.037	0.544 ± 0.046	0.597 ± 0.032	0.574 ± 0.021	0.569 ± 0.046	0.604 ± 0.014	0.602 ± 0.013
SSC 0-9 → 19	0.562 ± 0.024	0.540 ± 0.052	0.531 ± 0.055	0.570 ± 0.044	0.565 ± 0.028	0.568 ± 0.080	0.570 ± 0.010	0.613 ± 0.019
SSC 10-12 → 8	0.294 ± 0.028	0.380 ± 0.066	0.379 ± 0.076	0.398 ± 0.060	0.322 ± 0.048	0.411 ± 0.046	0.470 ± 0.010	0.531 ± 0.019
Overall	0.510	0.478	0.489	0.526	0.503	0.505	0.554	0.590

Table 6. Accuracy of HHAR and SSC datasets.

Scenario	Raincoat	CoDATs	Deep_Coral	MMDA	DIRT	DSAN	POND	Target Only
HHAR 0-6 → 7	0.787 ± 0.122	0.657 ± 0.106	0.822 ± 0.097	0.670 ± 0.063	0.662 ± 0.011	0.736 ± 0.160	0.853 ± 0.010	0.884 ± 0.014
HHAR 5-8 → 2	0.357 ± 0.027	0.356 ± 0.072	0.345 ± 0.025	0.274 ± 0.030	0.337 ± 0.010	0.314 ± 0.096	0.406 ± 0.017	0.897 ± 0.011
Overall	0.572	0.507	0.584	0.472	0.500	0.525	0.630	0.891
SSC 0-9 → 16	0.700 ± 0.022	0.632 ± 0.036	0.662 ± 0.039	0.689 ± 0.035	0.640 ± 0.029	0.639 ± 0.053	0.697 ± 0.011	0.716 ± 0.011
SSC 0-9 → 17	0.663 ± 0.018	0.565 ± 0.096	0.568 ± 0.057	0.625 ± 0.060	0.663 ± 0.051	0.584 ± 0.063	0.688 ± 0.005	0.706 ± 0.012
SSC 0-9 → 18	0.725 ± 0.018	0.641 ± 0.045	0.614 ± 0.044	0.682 ± 0.027	0.672 ± 0.035	0.653 ± 0.039	0.736 ± 0.009	0.717 ± 0.009
SSC 0-9 → 19	0.687 ± 0.014	0.665 ± 0.033	0.684 ± 0.043	0.709 ± 0.039	0.689 ± 0.027	0.727 ± 0.047	0.711 ± 0.006	0.741 ± 0.010
SSC 10-12 → 8	0.370 ± 0.024	0.449 ± 0.052	0.452 ± 0.061	0.462 ± 0.045	0.386 ± 0.040	0.472 ± 0.033	0.563 ± 0.020	0.625 ± 0.016
Overall	0.629	0.590	0.596	0.633	0.610	0.615	0.679	0.701