

Table 1: Robustness against large noise on contamination rates on target tasks of the proposed method: average test AUCs [%] over different true target contamination rate π_t within $\{0.1, 0.2, 0.3, 0.4\}$ and different numbers of target unlabeled support sizes within $\{25, 50\}$.

Noisy contam. rate	$0.4\pi_t$	$0.6\pi_t$	$0.8\pi_t$	$1.0\pi_t$	$1.2\pi_t$	$1.4\pi_t$	$1.6\pi_t$
Mnist-r	66.25	66.60	66.74	67.95	68.47	66.99	67.01
Isolet	69.68	69.71	69.73	70.61	69.92	69.80	69.79
IoT	98.89	98.90	99.05	99.12	98.93	98.55	98.64

Table 2: Results with small target contamination rates: Average test AUCs [%] when the contamination rate in target unlabeled data is 0.01.

Data	N_S	Ours	OSVM	IF	AE	LOE	nuAUC	TAD	MRA	MRA-OE	OSVM-FT	LOE-FT
Mnist-r	25	67.92	63.92	56.36	66.18	65.53	64.70	68.21	65.26	66.20	57.55	61.99
	50	70.53	66.07	58.00	70.81	70.45	64.92	72.11	69.26	72.15	57.70	62.73
Isolet	25	73.00	54.79	54.53	62.62	62.13	64.84	67.20	68.66	66.40	57.76	60.89
	50	77.30	55.30	54.99	66.24	66.20	65.37	69.89	74.30	72.99	58.00	63.75
IoT	25	99.11	71.71	49.03	92.23	93.12	98.66	98.06	98.86	92.15	77.05	92.67
	50	99.08	74.15	51.62	93.31	93.83	99.05	97.91	98.82	87.63	79.47	89.30
Avg.		81.16	64.33	54.09	75.23	75.21	76.26	78.90	79.19	76.25	64.59	71.90

Table 3: Average test AUCs [%] when the contamination rate in target unlabeled data is 0.1 with the School dataset. We followed the data construction procedure described in [36]. The numbers of source ,validation, and target tasks are 34, 20, and 20, respectively. Since each task has small (anomalous) data, we set the target contamination rate to 0.1, the number of support data to 20, the number of query normal data to 20 and the number of query unlabeled data to 50.

Ours	OSVM	IF	AE	LOE	nuAUC	TAD	MRA	MRA-OE	OSVM-FT	LOE-FT
73.62	58.00	59.68	59.00	56.82	72.71	71.45	71.74	60.73	57.55	58.89