

1 Full DomainBed results

1.1 Model selection: training-domain validation set

1.1.1 ColoredMNIST

Algorithm	+90%	+80%	-90%	Avg
ERM	71.7 \pm 0.1	72.9 \pm 0.2	10.0 \pm 0.1	51.5
IRM	72.5 \pm 0.1	73.3 \pm 0.5	10.2 \pm 0.3	52.0
GroupDRO	73.1 \pm 0.3	73.2 \pm 0.2	10.0 \pm 0.2	52.1
Mixup	72.7 \pm 0.4	73.4 \pm 0.1	10.1 \pm 0.1	52.1
MLDG	71.5 \pm 0.2	73.1 \pm 0.2	9.8 \pm 0.1	51.5
CORAL	71.6 \pm 0.3	73.1 \pm 0.1	9.9 \pm 0.1	51.5
MMD	71.4 \pm 0.3	73.1 \pm 0.2	9.9 \pm 0.3	51.5
DANN	71.4 \pm 0.9	73.1 \pm 0.1	10.0 \pm 0.0	51.5
CDANN	72.0 \pm 0.2	73.0 \pm 0.2	10.2 \pm 0.1	51.7
MTL	70.9 \pm 0.2	72.8 \pm 0.3	10.5 \pm 0.1	51.4
SagNet	71.8 \pm 0.2	73.0 \pm 0.2	10.3 \pm 0.0	51.7
ARM	82.0 \pm 0.5	76.5 \pm 0.3	10.2 \pm 0.0	56.2
VREx	72.4 \pm 0.3	72.9 \pm 0.4	10.2 \pm 0.0	51.8
RSC	71.9 \pm 0.3	73.1 \pm 0.2	10.0 \pm 0.2	51.7

1.1.2 RotatedMNIST

Algorithm	0	15	30	45	60	75	Avg
ERM	95.9 \pm 0.1	98.9 \pm 0.0	98.8 \pm 0.0	98.9 \pm 0.0	98.9 \pm 0.0	96.4 \pm 0.0	98.0
IRM	95.5 \pm 0.1	98.8 \pm 0.2	98.7 \pm 0.1	98.6 \pm 0.1	98.7 \pm 0.0	95.9 \pm 0.2	97.7
GroupDRO	95.6 \pm 0.1	98.9 \pm 0.1	98.9 \pm 0.1	99.0 \pm 0.0	98.9 \pm 0.0	96.5 \pm 0.2	98.0
Mixup	95.8 \pm 0.3	98.9 \pm 0.0	98.9 \pm 0.0	98.9 \pm 0.0	98.8 \pm 0.1	96.5 \pm 0.3	98.0
MLDG	95.8 \pm 0.1	98.9 \pm 0.1	99.0 \pm 0.0	98.9 \pm 0.1	99.0 \pm 0.0	95.8 \pm 0.3	97.9
CORAL	95.8 \pm 0.3	98.8 \pm 0.0	98.9 \pm 0.0	99.0 \pm 0.0	98.9 \pm 0.1	96.4 \pm 0.2	98.0
MMD	95.6 \pm 0.1	98.9 \pm 0.1	99.0 \pm 0.0	99.0 \pm 0.0	98.9 \pm 0.0	96.0 \pm 0.2	97.9
DANN	95.0 \pm 0.5	98.9 \pm 0.1	99.0 \pm 0.0	99.0 \pm 0.1	98.9 \pm 0.0	96.3 \pm 0.2	97.8
CDANN	95.7 \pm 0.2	98.8 \pm 0.0	98.9 \pm 0.1	98.9 \pm 0.1	98.9 \pm 0.1	96.1 \pm 0.3	97.9
MTL	95.6 \pm 0.1	99.0 \pm 0.1	99.0 \pm 0.0	98.9 \pm 0.1	99.0 \pm 0.1	95.8 \pm 0.2	97.9
SagNet	95.9 \pm 0.3	98.9 \pm 0.1	99.0 \pm 0.1	99.1 \pm 0.0	99.0 \pm 0.1	96.3 \pm 0.1	98.0
ARM	96.7 \pm 0.2	99.1 \pm 0.0	99.0 \pm 0.0	99.0 \pm 0.1	99.1 \pm 0.1	96.5 \pm 0.4	98.2
VREx	95.9 \pm 0.2	99.0 \pm 0.1	98.9 \pm 0.1	98.9 \pm 0.1	98.7 \pm 0.1	96.2 \pm 0.2	97.9
RSC	94.8 \pm 0.5	98.7 \pm 0.1	98.8 \pm 0.1	98.8 \pm 0.0	98.9 \pm 0.1	95.9 \pm 0.2	97.6

1.1.3 VLCS

Algorithm	C	L	S	V	Avg
ERM	97.7 \pm 0.4	64.3 \pm 0.9	73.4 \pm 0.5	74.6 \pm 1.3	77.5
IRM	98.6 \pm 0.1	64.9 \pm 0.9	73.4 \pm 0.6	77.3 \pm 0.9	78.5
GroupDRO	97.3 \pm 0.3	63.4 \pm 0.9	69.5 \pm 0.8	76.7 \pm 0.7	76.7
Mixup	98.3 \pm 0.6	64.8 \pm 1.0	72.1 \pm 0.5	74.3 \pm 0.8	77.4
MLDG	97.4 \pm 0.2	65.2 \pm 0.7	71.0 \pm 1.4	75.3 \pm 1.0	77.2
CORAL	98.3 \pm 0.1	66.1 \pm 1.2	73.4 \pm 0.3	77.5 \pm 1.2	78.8
MMD	97.7 \pm 0.1	64.0 \pm 1.1	72.8 \pm 0.2	75.3 \pm 3.3	77.5
DANN	99.0 \pm 0.3	65.1 \pm 1.4	73.1 \pm 0.3	77.2 \pm 0.6	78.6
CDANN	97.1 \pm 0.3	65.1 \pm 1.2	70.7 \pm 0.8	77.1 \pm 1.5	77.5
MTL	97.8 \pm 0.4	64.3 \pm 0.3	71.5 \pm 0.7	75.3 \pm 1.7	77.2
SagNet	97.9 \pm 0.4	64.5 \pm 0.5	71.4 \pm 1.3	77.5 \pm 0.5	77.8
ARM	98.7 \pm 0.2	63.6 \pm 0.7	71.3 \pm 1.2	76.7 \pm 0.6	77.6
VREx	98.4 \pm 0.3	64.4 \pm 1.4	74.1 \pm 0.4	76.2 \pm 1.3	78.3
RSC	97.9 \pm 0.1	62.5 \pm 0.7	72.3 \pm 1.2	75.6 \pm 0.8	77.1

1.1.4 PACS

Algorithm	A	C	P	S	Avg
ERM	84.7 \pm 0.4	80.8 \pm 0.6	97.2 \pm 0.3	79.3 \pm 1.0	85.5
IRM	84.8 \pm 1.3	76.4 \pm 1.1	96.7 \pm 0.6	76.1 \pm 1.0	83.5
GroupDRO	83.5 \pm 0.9	79.1 \pm 0.6	96.7 \pm 0.3	78.3 \pm 2.0	84.4
Mixup	86.1 \pm 0.5	78.9 \pm 0.8	97.6 \pm 0.1	75.8 \pm 1.8	84.6
MLDG	85.5 \pm 1.4	80.1 \pm 1.7	97.4 \pm 0.3	76.6 \pm 1.1	84.9
CORAL	88.3 \pm 0.2	80.0 \pm 0.5	97.5 \pm 0.3	78.8 \pm 1.3	86.2
MMD	86.1 \pm 1.4	79.4 \pm 0.9	96.6 \pm 0.2	76.5 \pm 0.5	84.6
DANN	86.4 \pm 0.8	77.4 \pm 0.8	97.3 \pm 0.4	73.5 \pm 2.3	83.6
CDANN	84.6 \pm 1.8	75.5 \pm 0.9	96.8 \pm 0.3	73.5 \pm 0.6	82.6
MTL	87.5 \pm 0.8	77.1 \pm 0.5	96.4 \pm 0.8	77.3 \pm 1.8	84.6
SagNet	87.4 \pm 1.0	80.7 \pm 0.6	97.1 \pm 0.1	80.0 \pm 0.4	86.3
ARM	86.8 \pm 0.6	76.8 \pm 0.5	97.4 \pm 0.3	79.3 \pm 1.2	85.1
VREx	86.0 \pm 1.6	79.1 \pm 0.6	96.9 \pm 0.5	77.7 \pm 1.7	84.9
RSC	85.4 \pm 0.8	79.7 \pm 1.8	97.6 \pm 0.3	78.2 \pm 1.2	85.2

1.1.5 OfficeHome

Algorithm	A	C	P	R	Avg
ERM	61.3 \pm 0.7	52.4 \pm 0.3	75.8 \pm 0.1	76.6 \pm 0.3	66.5
IRM	58.9 \pm 2.3	52.2 \pm 1.6	72.1 \pm 2.9	74.0 \pm 2.5	64.3
GroupDRO	60.4 \pm 0.7	52.7 \pm 1.0	75.0 \pm 0.7	76.0 \pm 0.7	66.0
Mixup	62.4 \pm 0.8	54.8 \pm 0.6	76.9 \pm 0.3	78.3 \pm 0.2	68.1
MLDG	61.5 \pm 0.9	53.2 \pm 0.6	75.0 \pm 1.2	77.5 \pm 0.4	66.8
CORAL	65.3 \pm 0.4	54.4 \pm 0.5	76.5 \pm 0.1	78.4 \pm 0.5	68.7
MMD	60.4 \pm 0.2	53.3 \pm 0.3	74.3 \pm 0.1	77.4 \pm 0.6	66.3
DANN	59.9 \pm 1.3	53.0 \pm 0.3	73.6 \pm 0.7	76.9 \pm 0.5	65.9
CDANN	61.5 \pm 1.4	50.4 \pm 2.4	74.4 \pm 0.9	76.6 \pm 0.8	65.8
MTL	61.5 \pm 0.7	52.4 \pm 0.6	74.9 \pm 0.4	76.8 \pm 0.4	66.4
SagNet	63.4 \pm 0.2	54.8 \pm 0.4	75.8 \pm 0.4	78.3 \pm 0.3	68.1
ARM	58.9 \pm 0.8	51.0 \pm 0.5	74.1 \pm 0.1	75.2 \pm 0.3	64.8
VREx	60.7 \pm 0.9	53.0 \pm 0.9	75.3 \pm 0.1	76.6 \pm 0.5	66.4
RSC	60.7 \pm 1.4	51.4 \pm 0.3	74.8 \pm 1.1	75.1 \pm 1.3	65.5

1.1.6 TerraIncognita

Algorithm	L100	L38	L43	L46	Avg
ERM	49.8 \pm 4.4	42.1 \pm 1.4	56.9 \pm 1.8	35.7 \pm 3.9	46.1
IRM	54.6 \pm 1.3	39.8 \pm 1.9	56.2 \pm 1.8	39.6 \pm 0.8	47.6
GroupDRO	41.2 \pm 0.7	38.6 \pm 2.1	56.7 \pm 0.9	36.4 \pm 2.1	43.2
Mixup	59.6 \pm 2.0	42.2 \pm 1.4	55.9 \pm 0.8	33.9 \pm 1.4	47.9
MLDG	54.2 \pm 3.0	44.3 \pm 1.1	55.6 \pm 0.3	36.9 \pm 2.2	47.7
CORAL	51.6 \pm 2.4	42.2 \pm 1.0	57.0 \pm 1.0	39.8 \pm 2.9	47.6
MMD	41.9 \pm 3.0	34.8 \pm 1.0	57.0 \pm 1.9	35.2 \pm 1.8	42.2
DANN	51.1 \pm 3.5	40.6 \pm 0.6	57.4 \pm 0.5	37.7 \pm 1.8	46.7
CDANN	47.0 \pm 1.9	41.3 \pm 4.8	54.9 \pm 1.7	39.8 \pm 2.3	45.8
MTL	49.3 \pm 1.2	39.6 \pm 6.3	55.6 \pm 1.1	37.8 \pm 0.8	45.6
SagNet	53.0 \pm 2.9	43.0 \pm 2.5	57.9 \pm 0.6	40.4 \pm 1.3	48.6
ARM	49.3 \pm 0.7	38.3 \pm 2.4	55.8 \pm 0.8	38.7 \pm 1.3	45.5
VREx	48.2 \pm 4.3	41.7 \pm 1.3	56.8 \pm 0.8	38.7 \pm 3.1	46.4
RSC	50.2 \pm 2.2	39.2 \pm 1.4	56.3 \pm 1.4	40.8 \pm 0.6	46.6

1.1.7 DomainNet

Algorithm	clip	info	paint	quick	real	sketch	Avg
ERM	58.1 \pm 0.3	18.8 \pm 0.3	46.7 \pm 0.3	12.2 \pm 0.4	59.6 \pm 0.1	49.8 \pm 0.4	40.9
IRM	48.5 \pm 2.8	15.0 \pm 1.5	38.3 \pm 4.3	10.9 \pm 0.5	48.2 \pm 5.2	42.3 \pm 3.1	33.9
GroupDRO	47.2 \pm 0.5	17.5 \pm 0.4	33.8 \pm 0.5	9.3 \pm 0.3	51.6 \pm 0.4	40.1 \pm 0.6	33.3
Mixup	55.7 \pm 0.3	18.5 \pm 0.5	44.3 \pm 0.5	12.5 \pm 0.4	55.8 \pm 0.3	48.2 \pm 0.5	39.2
MLDG	59.1 \pm 0.2	19.1 \pm 0.3	45.8 \pm 0.7	13.4 \pm 0.3	59.6 \pm 0.2	50.2 \pm 0.4	41.2
CORAL	59.2 \pm 0.1	19.7 \pm 0.2	46.6 \pm 0.3	13.4 \pm 0.4	59.8 \pm 0.2	50.1 \pm 0.6	41.5
MMD	32.1 \pm 13.3	11.0 \pm 4.6	26.8 \pm 11.3	8.7 \pm 2.1	32.7 \pm 13.8	28.9 \pm 11.9	23.4
DANN	53.1 \pm 0.2	18.3 \pm 0.1	44.2 \pm 0.7	11.8 \pm 0.1	55.5 \pm 0.4	46.8 \pm 0.6	38.3
CDANN	54.6 \pm 0.4	17.3 \pm 0.1	43.7 \pm 0.9	12.1 \pm 0.7	56.2 \pm 0.4	45.9 \pm 0.5	38.3
MTL	57.9 \pm 0.5	18.5 \pm 0.4	46.0 \pm 0.1	12.5 \pm 0.1	59.5 \pm 0.3	49.2 \pm 0.1	40.6
SagNet	57.7 \pm 0.3	19.0 \pm 0.2	45.3 \pm 0.3	12.7 \pm 0.5	58.1 \pm 0.5	48.8 \pm 0.2	40.3
ARM	49.7 \pm 0.3	16.3 \pm 0.5	40.9 \pm 1.1	9.4 \pm 0.1	53.4 \pm 0.4	43.5 \pm 0.4	35.5
VREx	47.3 \pm 3.5	16.0 \pm 1.5	35.8 \pm 4.6	10.9 \pm 0.3	49.6 \pm 4.9	42.0 \pm 3.0	33.6
RSC	55.0 \pm 1.2	18.3 \pm 0.5	44.4 \pm 0.6	12.2 \pm 0.2	55.7 \pm 0.7	47.8 \pm 0.9	38.9

1.1.8 Averages

Algorithm	ColoredMNIST	RotatedMNIST	VLCS	PACS	OfficeHome	TerraIncognita	DomainNet	Avg
ERM	51.5 \pm 0.1	98.0 \pm 0.0	77.5 \pm 0.4	85.5 \pm 0.2	66.5 \pm 0.3	46.1 \pm 1.8	40.9 \pm 0.1	66.6
IRM	52.0 \pm 0.1	97.7 \pm 0.1	78.5 \pm 0.5	83.5 \pm 0.8	64.3 \pm 2.2	47.6 \pm 0.8	33.9 \pm 2.8	65.4
GroupDRO	52.1 \pm 0.0	98.0 \pm 0.0	76.7 \pm 0.6	84.4 \pm 0.8	66.0 \pm 0.7	43.2 \pm 1.1	33.3 \pm 0.2	64.8
Mixup	52.1 \pm 0.2	98.0 \pm 0.1	77.4 \pm 0.6	84.6 \pm 0.6	68.1 \pm 0.3	47.9 \pm 0.8	39.2 \pm 0.1	66.7
MLDG	51.5 \pm 0.1	97.9 \pm 0.0	77.2 \pm 0.4	84.9 \pm 1.0	66.8 \pm 0.6	47.7 \pm 0.9	41.2 \pm 0.1	66.7
CORAL	51.5 \pm 0.1	98.0 \pm 0.1	78.8 \pm 0.6	86.2 \pm 0.3	68.7 \pm 0.3	47.6 \pm 1.0	41.5 \pm 0.1	67.5
MMD	51.5 \pm 0.2	97.9 \pm 0.0	77.5 \pm 0.9	84.6 \pm 0.5	66.3 \pm 0.1	42.2 \pm 1.6	23.4 \pm 9.5	63.3
DANN	51.5 \pm 0.3	97.8 \pm 0.1	78.6 \pm 0.4	83.6 \pm 0.4	65.9 \pm 0.6	46.7 \pm 0.5	38.3 \pm 0.1	66.1
CDANN	51.7 \pm 0.1	97.9 \pm 0.1	77.5 \pm 0.1	82.6 \pm 0.9	65.8 \pm 1.3	45.8 \pm 1.6	38.3 \pm 0.3	65.6
MTL	51.4 \pm 0.1	97.9 \pm 0.0	77.2 \pm 0.4	84.6 \pm 0.5	66.4 \pm 0.5	45.6 \pm 1.2	40.6 \pm 0.1	66.2
SagNet	51.7 \pm 0.0	98.0 \pm 0.0	77.8 \pm 0.5	86.3 \pm 0.2	68.1 \pm 0.1	48.6 \pm 1.0	40.3 \pm 0.1	67.2
ARM	56.2 \pm 0.2	98.2 \pm 0.1	77.6 \pm 0.3	85.1 \pm 0.4	64.8 \pm 0.3	45.5 \pm 0.3	35.5 \pm 0.2	66.1
VREx	51.8 \pm 0.1	97.9 \pm 0.1	78.3 \pm 0.2	84.9 \pm 0.6	66.4 \pm 0.6	46.4 \pm 0.6	33.6 \pm 2.9	65.6
RSC	51.7 \pm 0.2	97.6 \pm 0.1	77.1 \pm 0.5	85.2 \pm 0.9	65.5 \pm 0.9	46.6 \pm 1.0	38.9 \pm 0.5	66.1

1.2 Model selection: leave-one-domain-out cross-validation

1.2.1 ColoredMNIST

Algorithm	+90%	+80%	-90%	Avg
ERM	50.0 \pm 0.2	50.1 \pm 0.2	10.0 \pm 0.0	36.7
IRM	46.7 \pm 2.4	51.2 \pm 0.3	23.1 \pm 10.7	40.3
GroupDRO	50.1 \pm 0.5	50.0 \pm 0.5	10.2 \pm 0.1	36.8
Mixup	36.6 \pm 10.9	53.4 \pm 5.9	10.2 \pm 0.1	33.4
MLDG	50.1 \pm 0.6	50.1 \pm 0.3	10.0 \pm 0.1	36.7
CORAL	49.5 \pm 0.0	59.5 \pm 8.2	10.2 \pm 0.1	39.7
MMD	50.3 \pm 0.2	50.0 \pm 0.4	9.9 \pm 0.2	36.8
DANN	49.9 \pm 0.1	62.1 \pm 7.0	10.0 \pm 0.1	40.7
CDANN	63.2 \pm 10.1	44.4 \pm 4.5	9.9 \pm 0.2	39.1
MTL	44.3 \pm 4.9	50.7 \pm 0.0	10.1 \pm 0.1	35.0
SagNet	49.9 \pm 0.4	49.7 \pm 0.3	10.0 \pm 0.1	36.5
ARM	50.0 \pm 0.3	50.1 \pm 0.3	10.2 \pm 0.0	36.8
VREx	50.2 \pm 0.4	50.5 \pm 0.5	10.1 \pm 0.0	36.9
RSC	49.6 \pm 0.3	49.7 \pm 0.4	10.1 \pm 0.0	36.5

1.2.2 RotatedMNIST

Algorithm	0	15	30	45	60	75	Avg
ERM	95.3 \pm 0.2	98.9 \pm 0.1	98.9 \pm 0.1	98.8 \pm 0.1	98.5 \pm 0.1	96.2 \pm 0.2	97.7
IRM	94.5 \pm 0.5	98.2 \pm 0.2	98.7 \pm 0.1	96.6 \pm 1.5	98.4 \pm 0.1	95.8 \pm 0.1	97.0
GroupDRO	95.7 \pm 0.3	98.7 \pm 0.1	98.9 \pm 0.1	98.6 \pm 0.2	98.6 \pm 0.2	95.3 \pm 0.9	97.6
Mixup	94.8 \pm 0.4	98.8 \pm 0.0	98.9 \pm 0.1	99.0 \pm 0.1	98.9 \pm 0.0	96.4 \pm 0.3	97.8
MLDG	94.3 \pm 0.4	98.8 \pm 0.1	99.0 \pm 0.1	98.8 \pm 0.1	98.8 \pm 0.1	96.0 \pm 0.3	97.6
CORAL	95.7 \pm 0.5	98.5 \pm 0.2	98.9 \pm 0.2	98.6 \pm 0.2	98.8 \pm 0.1	96.3 \pm 0.2	97.8
MMD	95.8 \pm 0.2	98.7 \pm 0.1	99.0 \pm 0.0	98.8 \pm 0.1	98.7 \pm 0.1	96.1 \pm 0.2	97.8
DANN	95.1 \pm 0.5	98.3 \pm 0.5	98.5 \pm 0.1	99.0 \pm 0.1	98.6 \pm 0.1	96.1 \pm 0.3	97.6
CDANN	94.3 \pm 0.5	98.4 \pm 0.3	98.9 \pm 0.1	98.7 \pm 0.1	98.9 \pm 0.1	95.7 \pm 0.4	97.5
MTL	95.5 \pm 0.3	98.6 \pm 0.3	98.8 \pm 0.1	99.0 \pm 0.1	99.0 \pm 0.1	95.6 \pm 0.3	97.8
SagNet	94.0 \pm 1.6	98.7 \pm 0.2	98.9 \pm 0.1	99.1 \pm 0.0	98.8 \pm 0.1	74.2 \pm 16.5	94.0
ARM	95.8 \pm 0.1	99.0 \pm 0.1	99.0 \pm 0.0	98.9 \pm 0.1	98.8 \pm 0.1	96.9 \pm 0.3	98.1
VREx	95.8 \pm 0.2	98.7 \pm 0.0	98.5 \pm 0.1	98.9 \pm 0.1	74.0 \pm 20.1	95.5 \pm 0.5	93.6
RSC	94.6 \pm 0.0	98.4 \pm 0.2	99.0 \pm 0.1	98.9 \pm 0.0	98.8 \pm 0.1	95.9 \pm 0.4	97.6

1.2.3 VLCS

Algorithm	C	L	S	V	Avg
ERM	98.0 \pm 0.4	62.6 \pm 0.9	70.8 \pm 1.9	77.5 \pm 1.9	77.2
IRM	98.6 \pm 0.3	66.0 \pm 1.1	69.3 \pm 0.9	71.5 \pm 1.9	76.3
GroupDRO	98.1 \pm 0.3	66.4 \pm 0.9	71.0 \pm 0.3	76.1 \pm 1.4	77.9
Mixup	98.4 \pm 0.3	63.4 \pm 0.7	72.9 \pm 0.8	76.1 \pm 1.2	77.7
MLDG	98.5 \pm 0.3	61.7 \pm 1.2	73.6 \pm 1.8	75.0 \pm 0.8	77.2
CORAL	96.9 \pm 0.9	65.7 \pm 1.2	73.3 \pm 0.7	78.7 \pm 0.8	78.7
MMD	98.3 \pm 0.1	65.6 \pm 0.7	69.7 \pm 1.0	75.7 \pm 0.9	77.3
DANN	97.3 \pm 1.3	63.7 \pm 1.3	72.6 \pm 1.4	74.2 \pm 1.7	76.9
CDANN	97.6 \pm 0.6	63.4 \pm 0.8	70.5 \pm 1.4	78.6 \pm 0.5	77.5
MTL	97.6 \pm 0.6	60.6 \pm 1.3	71.0 \pm 1.2	77.2 \pm 0.7	76.6
SagNet	97.3 \pm 0.4	61.6 \pm 0.8	73.4 \pm 1.9	77.6 \pm 0.4	77.5
ARM	97.2 \pm 0.5	62.7 \pm 1.5	70.6 \pm 0.6	75.8 \pm 0.9	76.6
VREx	96.9 \pm 0.3	64.8 \pm 2.0	69.7 \pm 1.8	75.5 \pm 1.7	76.7
RSC	97.5 \pm 0.6	63.1 \pm 1.2	73.0 \pm 1.3	76.2 \pm 0.5	77.5

1.2.4 PACS

Algorithm	A	C	P	S	Avg
ERM	83.2 ± 1.3	76.8 ± 1.7	97.2 ± 0.3	74.8 ± 1.3	83.0
IRM	81.7 ± 2.4	77.0 ± 1.3	96.3 ± 0.2	71.1 ± 2.2	81.5
GroupDRO	84.4 ± 0.7	77.3 ± 0.8	96.8 ± 0.8	75.6 ± 1.4	83.5
Mixup	85.2 ± 1.9	77.0 ± 1.7	96.8 ± 0.8	73.9 ± 1.6	83.2
MLDG	81.4 ± 3.6	77.9 ± 2.3	96.2 ± 0.3	76.1 ± 2.1	82.9
CORAL	80.5 ± 2.8	74.5 ± 0.4	96.8 ± 0.3	78.6 ± 1.4	82.6
MMD	84.9 ± 1.7	75.1 ± 2.0	96.1 ± 0.9	76.5 ± 1.5	83.2
DANN	84.3 ± 2.8	72.4 ± 2.8	96.5 ± 0.8	70.8 ± 1.3	81.0
CDANN	78.3 ± 2.8	73.8 ± 1.6	96.4 ± 0.5	66.8 ± 5.5	78.8
MTL	85.6 ± 1.5	78.9 ± 0.6	97.1 ± 0.3	73.1 ± 2.7	83.7
SagNet	81.1 ± 1.9	75.4 ± 1.3	95.7 ± 0.9	77.2 ± 0.6	82.3
ARM	85.9 ± 0.3	73.3 ± 1.9	95.6 ± 0.4	72.1 ± 2.4	81.7
VREx	81.6 ± 4.0	74.1 ± 0.3	96.9 ± 0.4	72.8 ± 2.1	81.3
RSC	83.7 ± 1.7	82.9 ± 1.1	95.6 ± 0.7	68.1 ± 1.5	82.6

1.2.5 OfficeHome

Algorithm	A	C	P	R	Avg
ERM	61.1 ± 0.9	50.7 ± 0.6	74.6 ± 0.3	76.4 ± 0.6	65.7
IRM	58.2 ± 1.2	51.6 ± 1.2	73.3 ± 2.2	74.1 ± 1.7	64.3
GroupDRO	59.9 ± 0.4	51.0 ± 0.4	73.7 ± 0.3	76.0 ± 0.2	65.2
Mixup	61.4 ± 0.5	53.0 ± 0.3	75.8 ± 0.2	77.7 ± 0.3	67.0
MLDG	60.5 ± 1.4	51.9 ± 0.2	74.4 ± 0.6	77.6 ± 0.4	66.1
CORAL	64.5 ± 0.8	54.8 ± 0.2	76.6 ± 0.3	78.1 ± 0.2	68.5
MMD	60.8 ± 0.7	53.7 ± 0.5	50.2 ± 19.9	76.0 ± 0.7	60.2
DANN	60.2 ± 1.3	52.2 ± 0.9	71.3 ± 2.0	76.0 ± 0.6	64.9
CDANN	58.7 ± 2.9	49.0 ± 2.1	73.6 ± 1.0	76.0 ± 1.1	64.3
MTL	59.1 ± 0.3	52.1 ± 1.2	74.7 ± 0.4	77.0 ± 0.6	65.7
SagNet	63.0 ± 0.8	54.0 ± 0.3	76.6 ± 0.3	76.8 ± 0.4	67.6
ARM	58.7 ± 0.8	49.8 ± 1.1	73.1 ± 0.5	75.9 ± 0.1	64.4
VREx	57.6 ± 3.4	51.3 ± 1.3	74.9 ± 0.2	75.8 ± 0.7	64.9
RSC	61.6 ± 1.0	51.1 ± 0.8	74.8 ± 1.1	75.7 ± 0.9	65.8

1.2.6 TerraIncognita

Algorithm	L100	L38	L43	L46	Avg
ERM	34.4 \pm 5.6	38.1 \pm 4.0	55.7 \pm 1.0	37.4 \pm 1.1	41.4
IRM	46.7 \pm 1.8	40.9 \pm 2.1	52.2 \pm 3.3	24.9 \pm 10.0	41.2
GroupDRO	45.2 \pm 6.2	40.1 \pm 2.0	55.8 \pm 1.4	38.3 \pm 4.2	44.9
Mixup	59.7 \pm 1.5	41.3 \pm 2.1	55.9 \pm 0.8	37.9 \pm 1.5	48.7
MLDG	51.0 \pm 1.9	39.2 \pm 0.2	56.2 \pm 1.1	38.3 \pm 2.4	46.2
CORAL	52.4 \pm 7.2	39.7 \pm 1.5	56.1 \pm 0.9	37.1 \pm 2.2	46.3
MMD	49.1 \pm 2.2	42.0 \pm 1.6	55.3 \pm 1.9	39.5 \pm 2.0	46.5
DANN	46.9 \pm 3.9	38.8 \pm 1.1	55.5 \pm 1.4	36.2 \pm 1.1	44.4
CDANN	43.9 \pm 7.3	32.5 \pm 4.4	41.0 \pm 7.8	42.4 \pm 1.8	39.9
MTL	42.8 \pm 4.6	43.9 \pm 1.1	55.5 \pm 0.8	37.5 \pm 1.9	44.9
SagNet	48.1 \pm 2.4	47.1 \pm 0.8	54.4 \pm 1.1	39.1 \pm 1.8	47.2
ARM	48.9 \pm 5.3	34.4 \pm 3.5	51.9 \pm 0.8	35.4 \pm 2.3	42.6
VREx	46.4 \pm 1.4	25.5 \pm 5.8	39.6 \pm 12.8	37.8 \pm 3.6	37.3
RSC	40.0 \pm 1.3	32.1 \pm 2.5	53.9 \pm 0.5	34.2 \pm 0.2	40.0

1.2.7 DomainNet

Algorithm	clip	info	paint	quick	real	sketch	Avg
ERM	58.1 \pm 0.3	17.8 \pm 0.3	47.0 \pm 0.3	12.2 \pm 0.4	59.2 \pm 0.7	49.5 \pm 0.6	40.6
IRM	47.5 \pm 2.7	15.0 \pm 1.5	37.3 \pm 5.1	10.9 \pm 0.5	48.0 \pm 5.4	42.3 \pm 3.1	33.5
GroupDRO	47.2 \pm 0.5	17.0 \pm 0.6	33.8 \pm 0.5	9.2 \pm 0.4	51.6 \pm 0.4	39.2 \pm 1.2	33.0
Mixup	54.4 \pm 0.6	18.0 \pm 0.4	44.5 \pm 0.5	11.5 \pm 0.2	55.8 \pm 1.1	46.9 \pm 0.2	38.5
MLDG	58.3 \pm 0.7	19.3 \pm 0.2	45.8 \pm 0.7	13.2 \pm 0.3	59.4 \pm 0.2	49.8 \pm 0.3	41.0
CORAL	59.2 \pm 0.1	19.5 \pm 0.3	46.2 \pm 0.1	13.4 \pm 0.4	59.1 \pm 0.5	49.5 \pm 0.8	41.1
MMD	32.2 \pm 13.3	11.0 \pm 4.6	26.8 \pm 11.3	8.7 \pm 2.1	32.7 \pm 13.8	28.9 \pm 11.9	23.4
DANN	52.7 \pm 0.1	18.0 \pm 0.3	44.2 \pm 0.7	11.8 \pm 0.1	55.5 \pm 0.4	46.8 \pm 0.6	38.2
CDANN	53.1 \pm 0.9	17.3 \pm 0.1	43.7 \pm 0.9	11.6 \pm 0.6	56.2 \pm 0.4	45.9 \pm 0.5	38.0
MTL	57.3 \pm 0.3	19.3 \pm 0.2	45.7 \pm 0.4	12.5 \pm 0.1	59.3 \pm 0.2	49.2 \pm 0.1	40.6
SagNet	56.2 \pm 0.3	18.9 \pm 0.2	46.2 \pm 0.5	12.6 \pm 0.6	58.2 \pm 0.6	49.1 \pm 0.2	40.2
ARM	49.0 \pm 0.7	15.8 \pm 0.3	40.8 \pm 1.1	9.4 \pm 0.2	53.0 \pm 0.4	43.4 \pm 0.3	35.2
VREx	46.5 \pm 4.1	15.6 \pm 1.8	35.8 \pm 4.6	10.9 \pm 0.3	49.6 \pm 4.9	42.0 \pm 3.0	33.4
RSC	55.0 \pm 1.2	18.3 \pm 0.5	44.4 \pm 0.6	12.2 \pm 0.2	55.7 \pm 0.7	47.8 \pm 0.9	38.9

1.2.8 Averages

Algorithm	ColoredMNIST	RotatedMNIST	VLCS	PACS	OfficeHome	TerraIncognita	DomainNet	Avg
ERM	36.7 \pm 0.1	97.7 \pm 0.0	77.2 \pm 0.4	83.0 \pm 0.7	65.7 \pm 0.5	41.4 \pm 1.4	40.6 \pm 0.2	63.2
IRM	40.3 \pm 4.2	97.0 \pm 0.2	76.3 \pm 0.6	81.5 \pm 0.8	64.3 \pm 1.5	41.2 \pm 3.6	33.5 \pm 3.0	62.0
GroupDRO	36.8 \pm 0.1	97.6 \pm 0.1	77.9 \pm 0.5	83.5 \pm 0.2	65.2 \pm 0.2	44.9 \pm 1.4	33.0 \pm 0.3	62.7
Mixup	33.4 \pm 4.7	97.8 \pm 0.0	77.7 \pm 0.6	83.2 \pm 0.4	67.0 \pm 0.2	48.7 \pm 0.4	38.5 \pm 0.3	63.8
MLDG	36.7 \pm 0.2	97.6 \pm 0.0	77.2 \pm 0.9	82.9 \pm 1.7	66.1 \pm 0.5	46.2 \pm 0.9	41.0 \pm 0.2	64.0
CORAL	39.7 \pm 2.8	97.8 \pm 0.1	78.7 \pm 0.4	82.6 \pm 0.5	68.5 \pm 0.2	46.3 \pm 1.7	41.1 \pm 0.1	65.0
MMD	36.8 \pm 0.1	97.8 \pm 0.1	77.3 \pm 0.5	83.2 \pm 0.2	60.2 \pm 5.2	46.5 \pm 1.5	23.4 \pm 9.5	60.7
DANN	40.7 \pm 2.3	97.6 \pm 0.2	76.9 \pm 0.4	81.0 \pm 1.1	64.9 \pm 1.2	44.4 \pm 1.1	38.2 \pm 0.2	63.4
CDANN	39.1 \pm 4.4	97.5 \pm 0.2	77.5 \pm 0.2	78.8 \pm 2.2	64.3 \pm 1.7	39.9 \pm 3.2	38.0 \pm 0.1	62.2
MTL	35.0 \pm 1.7	97.8 \pm 0.1	76.6 \pm 0.5	83.7 \pm 0.4	65.7 \pm 0.5	44.9 \pm 1.2	40.6 \pm 0.1	63.5
SagNet	36.5 \pm 0.1	94.0 \pm 3.0	77.5 \pm 0.3	82.3 \pm 0.1	67.6 \pm 0.3	47.2 \pm 0.9	40.2 \pm 0.2	63.6
ARM	36.8 \pm 0.0	98.1 \pm 0.1	76.6 \pm 0.5	81.7 \pm 0.2	64.4 \pm 0.2	42.6 \pm 2.7	35.2 \pm 0.1	62.2
VREx	36.9 \pm 0.3	93.6 \pm 3.4	76.7 \pm 1.0	81.3 \pm 0.9	64.9 \pm 1.3	37.3 \pm 3.0	33.4 \pm 3.1	60.6
RSC	36.5 \pm 0.2	97.6 \pm 0.1	77.5 \pm 0.5	82.6 \pm 0.7	65.8 \pm 0.7	40.0 \pm 0.8	38.9 \pm 0.5	62.7

1.3 Model selection: test-domain validation set (oracle)

1.3.1 ColoredMNIST

Algorithm	+90%	+80%	-90%	Avg
ERM	71.8 \pm 0.4	72.9 \pm 0.1	28.7 \pm 0.5	57.8
IRM	72.0 \pm 0.1	72.5 \pm 0.3	58.5 \pm 3.3	67.7
GroupDRO	73.5 \pm 0.3	73.0 \pm 0.3	36.8 \pm 2.8	61.1
Mixup	72.5 \pm 0.2	73.9 \pm 0.4	28.6 \pm 0.2	58.4
MLDG	71.9 \pm 0.3	73.5 \pm 0.2	29.1 \pm 0.9	58.2
CORAL	71.1 \pm 0.2	73.4 \pm 0.2	31.1 \pm 1.6	58.6
MMD	69.0 \pm 2.3	70.4 \pm 1.6	50.6 \pm 0.2	63.3
DANN	72.4 \pm 0.5	73.9 \pm 0.5	24.9 \pm 2.7	57.0
CDANN	71.8 \pm 0.5	72.9 \pm 0.1	33.8 \pm 6.4	59.5
MTL	71.2 \pm 0.2	73.5 \pm 0.2	28.0 \pm 0.6	57.6
SagNet	72.1 \pm 0.3	73.2 \pm 0.3	29.4 \pm 0.5	58.2
ARM	84.9 \pm 0.9	76.8 \pm 0.6	27.9 \pm 2.1	63.2
VREx	72.8 \pm 0.3	73.0 \pm 0.3	55.2 \pm 4.0	67.0
RSC	72.0 \pm 0.1	73.2 \pm 0.1	30.2 \pm 1.6	58.5

1.3.2 RotatedMNIST

Algorithm	0	15	30	45	60	75	Avg
ERM	95.3 \pm 0.2	98.7 \pm 0.1	98.9 \pm 0.1	98.7 \pm 0.2	98.9 \pm 0.0	96.2 \pm 0.2	97.8
IRM	94.9 \pm 0.6	98.7 \pm 0.2	98.6 \pm 0.1	98.6 \pm 0.2	98.7 \pm 0.1	95.2 \pm 0.3	97.5
GroupDRO	95.9 \pm 0.1	99.0 \pm 0.1	98.9 \pm 0.1	98.8 \pm 0.1	98.6 \pm 0.1	96.3 \pm 0.4	97.9
Mixup	95.8 \pm 0.3	98.7 \pm 0.0	99.0 \pm 0.1	98.8 \pm 0.1	98.8 \pm 0.1	96.6 \pm 0.2	98.0
MLDG	95.7 \pm 0.2	98.9 \pm 0.1	98.8 \pm 0.1	98.9 \pm 0.1	98.6 \pm 0.1	95.8 \pm 0.4	97.8
CORAL	96.2 \pm 0.2	98.8 \pm 0.1	98.8 \pm 0.1	98.8 \pm 0.1	98.9 \pm 0.1	96.4 \pm 0.2	98.0
MMD	96.1 \pm 0.2	98.9 \pm 0.0	99.0 \pm 0.0	98.8 \pm 0.0	98.9 \pm 0.0	96.4 \pm 0.2	98.0
DANN	95.9 \pm 0.1	98.9 \pm 0.1	98.6 \pm 0.2	98.7 \pm 0.1	98.9 \pm 0.0	96.3 \pm 0.3	97.9
CDANN	95.9 \pm 0.2	98.8 \pm 0.0	98.7 \pm 0.1	98.9 \pm 0.1	98.8 \pm 0.1	96.1 \pm 0.3	97.9
MTL	96.1 \pm 0.2	98.9 \pm 0.0	99.0 \pm 0.0	98.7 \pm 0.1	99.0 \pm 0.0	95.8 \pm 0.3	97.9
SagNet	95.9 \pm 0.1	99.0 \pm 0.1	98.9 \pm 0.1	98.6 \pm 0.1	98.8 \pm 0.1	96.3 \pm 0.1	97.9
ARM	95.9 \pm 0.4	99.0 \pm 0.1	98.8 \pm 0.1	98.9 \pm 0.1	99.1 \pm 0.1	96.7 \pm 0.2	98.1
VREx	95.5 \pm 0.2	99.0 \pm 0.0	98.7 \pm 0.2	98.8 \pm 0.1	98.8 \pm 0.0	96.4 \pm 0.0	97.9
RSC	95.4 \pm 0.1	98.6 \pm 0.1	98.6 \pm 0.1	98.9 \pm 0.0	98.8 \pm 0.1	95.4 \pm 0.3	97.6

1.3.3 VLCS

Algorithm	C	L	S	V	Avg
ERM	97.6 \pm 0.3	67.9 \pm 0.7	70.9 \pm 0.2	74.0 \pm 0.6	77.6
IRM	97.3 \pm 0.2	66.7 \pm 0.1	71.0 \pm 2.3	72.8 \pm 0.4	76.9
GroupDRO	97.7 \pm 0.2	65.9 \pm 0.2	72.8 \pm 0.8	73.4 \pm 1.3	77.4
Mixup	97.8 \pm 0.4	67.2 \pm 0.4	71.5 \pm 0.2	75.7 \pm 0.6	78.1
MLDG	97.1 \pm 0.5	66.6 \pm 0.5	71.5 \pm 0.1	75.0 \pm 0.9	77.5
CORAL	97.3 \pm 0.2	67.5 \pm 0.6	71.6 \pm 0.6	74.5 \pm 0.0	77.7
MMD	98.8 \pm 0.0	66.4 \pm 0.4	70.8 \pm 0.5	75.6 \pm 0.4	77.9
DANN	99.0 \pm 0.2	66.3 \pm 1.2	73.4 \pm 1.4	80.1 \pm 0.5	79.7
CDANN	98.2 \pm 0.1	68.8 \pm 0.5	74.3 \pm 0.6	78.1 \pm 0.5	79.9
MTL	97.9 \pm 0.7	66.1 \pm 0.7	72.0 \pm 0.4	74.9 \pm 1.1	77.7
SagNet	97.4 \pm 0.3	66.4 \pm 0.4	71.6 \pm 0.1	75.0 \pm 0.8	77.6
ARM	97.6 \pm 0.6	66.5 \pm 0.3	72.7 \pm 0.6	74.4 \pm 0.7	77.8
VREx	98.4 \pm 0.2	66.4 \pm 0.7	72.8 \pm 0.1	75.0 \pm 1.4	78.1
RSC	98.0 \pm 0.4	67.2 \pm 0.3	70.3 \pm 1.3	75.6 \pm 0.4	77.8

1.3.4 PACS

Algorithm	A	C	P	S	Avg
ERM	86.5 \pm 1.0	81.3 \pm 0.6	96.2 \pm 0.3	82.7 \pm 1.1	86.7
IRM	84.2 \pm 0.9	79.7 \pm 1.5	95.9 \pm 0.4	78.3 \pm 2.1	84.5
GroupDRO	87.5 \pm 0.5	82.9 \pm 0.6	97.1 \pm 0.3	81.1 \pm 1.2	87.1
Mixup	87.5 \pm 0.4	81.6 \pm 0.7	97.4 \pm 0.2	80.8 \pm 0.9	86.8
MLDG	87.0 \pm 1.2	82.5 \pm 0.9	96.7 \pm 0.3	81.2 \pm 0.6	86.8
CORAL	86.6 \pm 0.8	81.8 \pm 0.9	97.1 \pm 0.5	82.7 \pm 0.6	87.1
MMD	88.1 \pm 0.8	82.6 \pm 0.7	97.1 \pm 0.5	81.2 \pm 1.2	87.2
DANN	87.0 \pm 0.4	80.3 \pm 0.6	96.8 \pm 0.3	76.9 \pm 1.1	85.2
CDANN	87.7 \pm 0.6	80.7 \pm 1.2	97.3 \pm 0.4	77.6 \pm 1.5	85.8
MTL	87.0 \pm 0.2	82.7 \pm 0.8	96.5 \pm 0.7	80.5 \pm 0.8	86.7
SagNet	87.4 \pm 0.5	81.2 \pm 1.2	96.3 \pm 0.8	80.7 \pm 1.1	86.4
ARM	85.0 \pm 1.2	81.4 \pm 0.2	95.9 \pm 0.3	80.9 \pm 0.5	85.8
VREx	87.8 \pm 1.2	81.8 \pm 0.7	97.4 \pm 0.2	82.1 \pm 0.7	87.2
RSC	86.0 \pm 0.7	81.8 \pm 0.9	96.8 \pm 0.7	80.4 \pm 0.5	86.2

1.3.5 OfficeHome

Algorithm	A	C	P	R	Avg
ERM	61.7 \pm 0.7	53.4 \pm 0.3	74.1 \pm 0.4	76.2 \pm 0.6	66.4
IRM	56.4 \pm 3.2	51.2 \pm 2.3	71.7 \pm 2.7	72.7 \pm 2.7	63.0
GroupDRO	60.5 \pm 1.6	53.1 \pm 0.3	75.5 \pm 0.3	75.9 \pm 0.7	66.2
Mixup	63.5 \pm 0.2	54.6 \pm 0.4	76.0 \pm 0.3	78.0 \pm 0.7	68.0
MLDG	60.5 \pm 0.7	54.2 \pm 0.5	75.0 \pm 0.2	76.7 \pm 0.5	66.6
CORAL	64.8 \pm 0.8	54.1 \pm 0.9	76.5 \pm 0.4	78.2 \pm 0.4	68.4
MMD	60.4 \pm 1.0	53.4 \pm 0.5	74.9 \pm 0.1	76.1 \pm 0.7	66.2
DANN	60.6 \pm 1.4	51.8 \pm 0.7	73.4 \pm 0.5	75.5 \pm 0.9	65.3
CDANN	57.9 \pm 0.2	52.1 \pm 1.2	74.9 \pm 0.7	76.2 \pm 0.2	65.3
MTL	60.7 \pm 0.8	53.5 \pm 1.3	75.2 \pm 0.6	76.6 \pm 0.6	66.5
SagNet	62.7 \pm 0.5	53.6 \pm 0.5	76.0 \pm 0.3	77.8 \pm 0.1	67.5
ARM	58.8 \pm 0.5	51.8 \pm 0.7	74.0 \pm 0.1	74.4 \pm 0.2	64.8
VREx	59.6 \pm 1.0	53.3 \pm 0.3	73.2 \pm 0.5	76.6 \pm 0.4	65.7
RSC	61.7 \pm 0.8	53.0 \pm 0.9	74.8 \pm 0.8	76.3 \pm 0.5	66.5

1.3.6 TerraIncognita

Algorithm	L100	L38	L43	L46	Avg
ERM	59.4 \pm 0.9	49.3 \pm 0.6	60.1 \pm 1.1	43.2 \pm 0.5	53.0
IRM	56.5 \pm 2.5	49.8 \pm 1.5	57.1 \pm 2.2	38.6 \pm 1.0	50.5
GroupDRO	60.4 \pm 1.5	48.3 \pm 0.4	58.6 \pm 0.8	42.2 \pm 0.8	52.4
Mixup	67.6 \pm 1.8	51.0 \pm 1.3	59.0 \pm 0.0	40.0 \pm 1.1	54.4
MLDG	59.2 \pm 0.1	49.0 \pm 0.9	58.4 \pm 0.9	41.4 \pm 1.0	52.0
CORAL	60.4 \pm 0.9	47.2 \pm 0.5	59.3 \pm 0.4	44.4 \pm 0.4	52.8
MMD	60.6 \pm 1.1	45.9 \pm 0.3	57.8 \pm 0.5	43.8 \pm 1.2	52.0
DANN	55.2 \pm 1.9	47.0 \pm 0.7	57.2 \pm 0.9	42.9 \pm 0.9	50.6
CDANN	56.3 \pm 2.0	47.1 \pm 0.9	57.2 \pm 1.1	42.4 \pm 0.8	50.8
MTL	58.4 \pm 2.1	48.4 \pm 0.8	58.9 \pm 0.6	43.0 \pm 1.3	52.2
SagNet	56.4 \pm 1.9	50.5 \pm 2.3	59.1 \pm 0.5	44.1 \pm 0.6	52.5
ARM	60.1 \pm 1.5	48.3 \pm 1.6	55.3 \pm 0.6	40.9 \pm 1.1	51.2
VREx	56.8 \pm 1.7	46.5 \pm 0.5	58.4 \pm 0.3	43.8 \pm 0.3	51.4
RSC	59.9 \pm 1.4	46.7 \pm 0.4	57.8 \pm 0.5	44.3 \pm 0.6	52.1

1.3.7 DomainNet

Algorithm	clip	info	paint	quick	real	sketch	Avg
ERM	58.6 \pm 0.3	19.2 \pm 0.2	47.0 \pm 0.3	13.2 \pm 0.2	59.9 \pm 0.3	49.8 \pm 0.4	41.3
IRM	40.4 \pm 6.6	12.1 \pm 2.7	31.4 \pm 5.7	9.8 \pm 1.2	37.7 \pm 9.0	36.7 \pm 5.3	28.0
GroupDRO	47.2 \pm 0.5	17.5 \pm 0.4	34.2 \pm 0.3	9.2 \pm 0.4	51.9 \pm 0.5	40.1 \pm 0.6	33.4
Mixup	55.6 \pm 0.1	18.7 \pm 0.4	45.1 \pm 0.5	12.8 \pm 0.3	57.6 \pm 0.5	48.2 \pm 0.4	39.6
MLDG	59.3 \pm 0.1	19.6 \pm 0.2	46.8 \pm 0.2	13.4 \pm 0.2	60.1 \pm 0.4	50.4 \pm 0.3	41.6
CORAL	59.2 \pm 0.1	19.9 \pm 0.2	47.4 \pm 0.2	14.0 \pm 0.4	59.8 \pm 0.2	50.4 \pm 0.4	41.8
MMD	32.2 \pm 13.3	11.2 \pm 4.5	26.8 \pm 11.3	8.8 \pm 2.2	32.7 \pm 13.8	29.0 \pm 11.8	23.5
DANN	53.1 \pm 0.2	18.3 \pm 0.1	44.2 \pm 0.7	11.9 \pm 0.1	55.5 \pm 0.4	46.8 \pm 0.6	38.3
CDANN	54.6 \pm 0.4	17.3 \pm 0.1	44.2 \pm 0.7	12.8 \pm 0.2	56.2 \pm 0.4	45.9 \pm 0.5	38.5
MTL	58.0 \pm 0.4	19.2 \pm 0.2	46.2 \pm 0.1	12.7 \pm 0.2	59.9 \pm 0.1	49.0 \pm 0.0	40.8
SagNet	57.7 \pm 0.3	19.1 \pm 0.1	46.3 \pm 0.5	13.5 \pm 0.4	58.9 \pm 0.4	49.5 \pm 0.2	40.8
ARM	49.6 \pm 0.4	16.5 \pm 0.3	41.5 \pm 0.8	10.8 \pm 0.1	53.5 \pm 0.3	43.9 \pm 0.4	36.0
VREx	43.3 \pm 4.5	14.1 \pm 1.8	32.5 \pm 5.0	9.8 \pm 1.1	43.5 \pm 5.6	37.7 \pm 4.5	30.1
RSC	55.0 \pm 1.2	18.3 \pm 0.5	44.4 \pm 0.6	12.5 \pm 0.1	55.7 \pm 0.7	47.8 \pm 0.9	38.9

1.3.8 Averages

Algorithm	ColoredMNIST	RotatedMNIST	VLCS	PACS	OfficeHome	TerraIncognita	DomainNet	Avg
ERM	57.8 \pm 0.2	97.8 \pm 0.1	77.6 \pm 0.3	86.7 \pm 0.3	66.4 \pm 0.5	53.0 \pm 0.3	41.3 \pm 0.1	68.7
IRM	67.7 \pm 1.2	97.5 \pm 0.2	76.9 \pm 0.6	84.5 \pm 1.1	63.0 \pm 2.7	50.5 \pm 0.7	28.0 \pm 5.1	66.9
GroupDRO	61.1 \pm 0.9	97.9 \pm 0.1	77.4 \pm 0.5	87.1 \pm 0.1	66.2 \pm 0.6	52.4 \pm 0.1	33.4 \pm 0.3	67.9
Mixup	58.4 \pm 0.2	98.0 \pm 0.1	78.1 \pm 0.3	86.8 \pm 0.3	68.0 \pm 0.2	54.4 \pm 0.3	39.6 \pm 0.1	69.0
MLDG	58.2 \pm 0.4	97.8 \pm 0.1	77.5 \pm 0.1	86.8 \pm 0.4	66.6 \pm 0.3	52.0 \pm 0.1	41.6 \pm 0.1	68.7
CORAL	58.6 \pm 0.5	98.0 \pm 0.0	77.7 \pm 0.2	87.1 \pm 0.5	68.4 \pm 0.2	52.8 \pm 0.2	41.8 \pm 0.1	69.2
MMD	63.3 \pm 1.3	98.0 \pm 0.1	77.9 \pm 0.1	87.2 \pm 0.1	66.2 \pm 0.3	52.0 \pm 0.4	23.5 \pm 9.4	66.9
DANN	57.0 \pm 1.0	97.9 \pm 0.1	79.7 \pm 0.5	85.2 \pm 0.2	65.3 \pm 0.8	50.6 \pm 0.4	38.3 \pm 0.1	67.7
CDANN	59.5 \pm 2.0	97.9 \pm 0.0	79.9 \pm 0.2	85.8 \pm 0.8	65.3 \pm 0.5	50.8 \pm 0.6	38.5 \pm 0.2	68.2
MTL	57.6 \pm 0.3	97.9 \pm 0.1	77.7 \pm 0.5	86.7 \pm 0.2	66.5 \pm 0.4	52.2 \pm 0.4	40.8 \pm 0.1	68.5
SagNet	58.2 \pm 0.3	97.9 \pm 0.0	77.6 \pm 0.1	86.4 \pm 0.4	67.5 \pm 0.2	52.5 \pm 0.4	40.8 \pm 0.2	68.7
ARM	63.2 \pm 0.7	98.1 \pm 0.1	77.8 \pm 0.3	85.8 \pm 0.2	64.8 \pm 0.4	51.2 \pm 0.5	36.0 \pm 0.2	68.1
VREx	67.0 \pm 1.3	97.9 \pm 0.1	78.1 \pm 0.2	87.2 \pm 0.6	65.7 \pm 0.3	51.4 \pm 0.5	30.1 \pm 3.7	68.2
RSC	58.5 \pm 0.5	97.6 \pm 0.1	77.8 \pm 0.6	86.2 \pm 0.5	66.5 \pm 0.6	52.1 \pm 0.2	38.9 \pm 0.6	68.2