						MegaDepth											ScanNet					
Pipeline	Filtered	Precision	Recall	AUC_{05}^F	AUC_{010}^F	$AUC_{0:20}^F$	$\mathrm{AUC}^F_{\mathcal{L}}$	AUC_{05}^{E}	$AUC_{@10}^{E}$	$AUC_{\otimes 20}^{E}$	AUC_{\angle}^E	Filtered	Precision	Recall	AUC_{05}^F	$AUC_{@10}^{F}$	$AUC_{@20}^F$	AUC_{\angle}^F	AUC_{05}^{E}	$AUC_{@10}^{E}$	AUC_{020}^E	AUC_{Z}^{E}
Key.Net+AffNet+HardNet	0.00	55.63	100.00	0.00	0.09	0.70	0.26	43.37	60.54	73.97	59.29	0.00	34.81	99.14	0.00	0.16	1.04	0.40	10.97	22.16	35.11	22.75
+ACNe	44.12	88.21	89.85	9.20	22.14	41.99	24.44	40.11	59.09	75.01	58.07	57.62	58.28	71.55	2.15	7.61	19.60	9.79	10.04	22.65	37.67	23.45
+ACNe+MAGSAC _↑	58.35	94.96	72.39	30.34	46.86	62.64	46.61	43.48	62.01	76.90	60.80	74.71	64.38	46.67	6.39	16.04	29.61	17.35	11.14	24.06	38.68	24.63
+ACNe+MAGSAC↓ +AdaLAM	63.53	95.62	63.92	30.67	46.13	61.35	46.05	41.48	60.64	76.15	59.43	78.06	64.28	40.36	6.65	16.13	29.18	17.32	11.90	24.60	39.68	25.40
+AdaLAM+MAGSAC+	94.22	89.43	8.63	10.68	18.04	27.41	18.71	17.57	29.07	41.84	29.49	96.95	43.29	4.29	0.65	1.89	4.23	2.26	1.33	3.40	7.23	3.99
+AdaLAM+MAGSAC	94.89 95.25	73.94 74.19	7.64 7.16	12.86 13.08	21.72 22.28	31.44	22.00 22.55	17.16 15.69	29.09 28.33	41.38	29.21 28.40	97.79 97.95	26.70 26.60	3.12 2.89	1.17	2.61 2.76	5.21 5.42	3.00 3.08	1.34	3.17 3.17	6.13 6.55	3.54 3.70
+CC	42.68	88.12	88 40	10.59	20.03	33 64	21 42	40.01	58.00	72.81	56.94	44 57	58 13	74.48	1.46	4.70	11 14	5.77	8.32	17.80	29.84	18.66
+CC+MAGSAC _↑	58.99	95.09	69.84	32.13	46.53	60.90	46.52	42.19	59.90	74.56	58.89	76.55	64.24	42.08	4.81	11.02	20.18	12.00	7.89	18.14	30.37	18.80
+CC+MAGSAC _⊥	64.04	95.70	61.73	32.61	47.04	61.28	46.98	40.63	59.10	74.28	58.00	79.60	64.21	36.63	4.66	10.85	19.95	11.82	8.38	17.78	29.69	18.62
+CLNet	46.21	87.24	84.90	1.61	3.86	12.39	5.95	35.98	55.57	72.01	54.52	70.52	61.97	52.50	0.66	2.18	6.92	3.25	6.88	17.07	30.16	18.04
$+CLNet+MAGSAC_{\uparrow}$	60.92	94.63	66.91	20.65	33.72	48.68	34.35	36.07	55.49	72.06	54.54	79.84	65.01	37.52	2.40	6.95	15.09	8.15	6.76	16.21	28.47	17.15
+CLNet+MAGSAC↓ +ConvMatch	65.79	95.35	59.11	20.99	34.93	50.67	35.53	36.39	56.12	72.42	54.97	82.42	64.99	32.76	2.30	6.82	14.99	8.03	7.37	16.75	28.84	17.65
+ConvMatch +ConvMatch+MAGSAC+	57.19	87.09	74.85	11.44	21.84	35.50	22.93 35.91	36.05	54.80	69.59	53.48	65.08	62.47	65.72	1.84	6.40	16.43	8.22	8.57	21.11	35.54	21.74
	68.42 72.39	92.80	59.43 52.37	22.19	35.70 35.41	49.85 50.10	35.91 35.94	36.73 36.71	55.73 54.79	71.08 69.78	54.51 53.76	77.98 80.89	66.55 66.38	43.33 37.51	4.74 5.31	12.09 12.66	23.98 24.38	13.60 14.12	10.65 10.41	22.73 22.56	36.98 36.95	23.46
+DeMatch	51.43	87.94	80.27	9.58	18.90	32.07	20.19	33.75	53.04	69.90	52.23	66.07	60.87	62.02	1.39	4.96	12.75	6.37	7.58	18.64	32.29	19.51
+DeMatch+MAGSAC _↑	64.19	94.79	63.54	22.62	35.44	50.12	36.06	35.99	55.57	72.08	54.55	78.63	64.81	40.89	4.44	10.49	21.74	12.22	8.81	20.05	33.98	20.95
$+$ DeMatch $+$ MAGSAC $_{\downarrow}$	68.70	95.38	55.92	22.86	35.65	50.13	36.21	36.86	56.31	72.54	55.24	81.46	64.73	35.32	4.50	11.19	21.71	12.46	8.30	19.51	33.85	20.55
+FC-GNN	50.06	94.27	84.19	14.28	24.85	40.47	26.53	48.09	64.96	77.72	63.59	72.92	67.12	49.46	3.77	9.02	17.74	10.18	12.85	25.96	39.83	26.21
$+FC-GNN+MAGSAC_{\uparrow}$	53.11	96.65	80.83	45.09	59.64	72.86	59.19	46.63	64.44	77.53	62.86	76.26	68.99	44.51	8.15	17.35	29.14	18.22	12.53	25.05	39.35	25.64
+FC-GNN+MAGSAC↓ +GMS	54.47	96.87	78.59	45.85	60.52	73.28	59.88	48.11	64.87	77.25	63.41	77.57	69.07	42.13	8.69	17.89	29.77	18.78	12.58	25.70	39.78	26.02
+GMS +GMS+MAGSAC+	52.55	81.19	68.66	8.47	16.29	28.75	17.84	36.40	52.88	65.99	51.76	79.39	56.51	33.54	1.13	3.83	8.77	4.58	5.47	12.11	21.95	13.17
+GMS+MAGSAC+	65.30 69.51	86.33 86.89	54.27 48.11	32.57 32.93	45.47 45.49	57.52 57.22	45.19 45.21	38.22 39.46	53.39 55.18	66.01 67.38	52.54 54.01	85.67 87.43	55.02 54.96	24.39 21.49	2.84 2.76	7.65 7.52	14.66 13.96	8.38 8.08	5.16 4.96	12.63 12.26	22.12 21.27	13.30 12.83
	55 99	92.11	74.01	30.77	44.16	57.49	44 14	45 24	62.10	75.98	61 11	71.16	60.23	49 42	6.70	15.38	26.42	16.16	11.57	23.73	37.47	24.25
$+MAGSAC_{\downarrow}$	61.72	92.86	64.87	32.40	45.51	58.53	45.48	43.87	61.95	75.98	60.60	75.27	60.14	42.19	7.38	15.49	26.19	16.35	11.89	23.89	37.01	24.26
+MS ² DG-Net	66.90	78.67	52.70	0.00	0.22	0.92	0.38	29.97	46.80	62.41	46.39	64.15	51.72	55.98	0.00	0.12	0.74	0.29	6.52	15.58	26.94	16.35
$+MS^2DG-Net+MAGSAC_{\uparrow}$	77.72	90.52	41.80	22.90	36.57	52.03	37.17	29.34	46.54	62.59	46.16	82.01	63.27	34.44	3.04	8.65	17.48	9.72	6.43	15.42	27.26	16.37
+MS ² DG-Net+MAGSAC↓	80.41	91.07	36.98	23.22	37.67	52.91	37.93	28.55	46.67	62.94	46.05	84.12	63.12	30.26	3.68	9.17	17.46	10.10	6.78	15.73	26.86	16.46
+NCC +NCC+MAGSAC+	0.00	55.27	100.11	0.00	0.09	0.69	0.26	47.13	64.21	76.85	62.73	0.00	34.55	100.04	0.07	0.18	1.08	0.44	10.87	23.08	36.95	23.63
+NCC+MAGSAC _↓	52.59 56.46	92.74	80.67 74.45	32.08 34.22	44.31 47.51	56.35 59.51	44.25 47.08	45.39 43.93	63.07 62.26	76.80 76.45	61.75 60.88	69.30 72.88	60.73 60.66	53.46 47.04	7.32 7.61	16.75 16.70	28.39 27.90	17.49 17.40	12.24 11.96	25.28 24.48	39.38	25.64 25.03
+NCMNet	56.46 45.95	93.35 87.48	74.45 85.85	1.83	47.51	12.84	6.45	43.93 36.39	62.26 56.43	76.45	60.88 55.20	72.88	60.66	47.04 51.98	1.06	3.39	27.90 8.56	17.40	7.73	24.48 16.98	38.65	25.03 18.10
+NCMNet+MAGSAC†	60.68	94.71	67.68	21.46	34.22	50.30	35.33	35.60	55.19	71.88	54.22	79.42	64.34	37.46	2.99	8.12	16.38	9.16	7.03	17.23	29.58	17.95
$+NCMNet+MAGSAC_{\downarrow}$	65.58	95.44	59.78	20.87	34.37	50.32	35.18	36.90	56.08	72.26	55.08	81.95	64.40	32.94	3.67	8.46	16.59	9.57	7.43	16.92	29.18	17.84
+OANet	68.37	89.69	56.00	6.29	14.97	27.20	16.15	32.74	50.87	67.78	50.46	81.01	59.55	35.42	1.83	5.88	13.08	6.93	4.82	12.85	24.84	14.17
	75.10	94.55	46.49	16.02	28.48	44.08	29.53	33.16	51.57	67.86	50.87	86.22	61.68	26.29	2.90	8.01	16.84	9.25	6.34	15.07	26.25	15.89
+OANet+MAGSAC↓	78.16	95.09	41.09	15.55	27.57	43.41	28.84	31.15	50.61	67.10	49.62	87.66	61.54	23.55	3.11	8.12	17.15	9.46	5.38	14.15	25.88	15.14
	34.40	80.55	95.13	1.18	3.02	9.31	4.50	46.17	62.93	76.58	61.89	43.48	50.24	82.69	0.38	0.95	3.81	1.71	11.55	23.85	37.95	24.45
$+MOP_{0.5K}+MiHo+MAGSAC_{\uparrow}$ $+MOP_{0.5K}+MiHo+MAGSAC_{\downarrow}$	56.66	93.79	73.39	37.54	52.48	65.60	51.87	46.13 45.50	63.79	76.84	62.25	72.88	63.42 63.33	49.04	6.92	15.60	27.67	16.73	12.32	24.68	38.66	25.22
+MOP _{0.5K} +MiHo+NCC	62.12 34.40	94.52 81.17	64.76	37.59 1.13	52.48 3.02	9.17	52.04 4.44	49.25	62.66 66.34	76.29 78.91	61.48	76.71 43.48	50.39	42.10 83.80	8.02 0.22	17.21 0.80	29.02 3.70	18.08	12.92 13.86	25.24 27.23	39.30 41.98	25.82 27.69
+MOP _{0.5K} +MiHo+NCC+MAGSAC↑	51.27	94.73	83.79	38.71	52.63	65.93	52.42	46.24	64.33	77.57	62.71	69.76	64.39	56.04	8.44	18.36	30.08	18.96	13.98	28.21	42.79	28.33
$+MOP_{0.5K}+MiHo+NCC+MAGSAC_{\downarrow}$	54.22	95.13	78.96	39.95	54.15	67.56	53.89	47.18	65.70	78.40	63.76	72.62	64.53	50.79	8.77	18.60	30.22	19.20	13.40	26.56	41.09	27.02
$+MOP_{1.0K}+MiHo$	33.67	80.06	95.73	0.52	2.41	8.10	3.67	46.74	64.05	77.10	62.63	42.29	49.97	84.19	0.21	0.68	3.59	1.49	12.56	25.17	39.35	25.69
$+MOP_{1.0K}+MiHo+MAGSAC\uparrow$	56.53	93.78	73.70	37.47	51.62	64.23	51.11	46.03	63.01	76.05	61.70	72.73	63.52	49.73	7.73	16.96	28.83	17.84	12.60	24.87	39.24	25.57
+MOP _{1.0K} +MiHo+MAGSAC _↓ +MOP _{1.0K} +MiHo+NCC	62.05	94.56	65.03	39.21	53.64	66.10	52.98	45.01	62.29	75.42	60.91	76.51	63.38	42.78	7.54	16.63	28.26	17.48	12.82	25.66	39.93	26.14
+MOP _{1.0K} +MiHo+NCC +MOP _{1.0K} +MiHo+NCC+MAGSAC _↑	33.67 51.14	80.77 94.84	97.86 84.29	0.73 40.26	2.69 54.05	8.17	3.86	49.22 47.46	66.13 65.62	78.71	64.69 63.88	42.29 69.47	50.23 64.65	86.06 56.98	0.20	0.65 19.21	3.31	1.39	13.40 13.60	27.79	42.34 41.30	27.85 27.22
	54.10	94.84	79.53	40.26	54.05 55.53	67.02	53.78 55.10	47.46	65.69	78.55 78.52	63.88	72.39	64.63	51.42	9.34 8.68	19.21	30.57	19.71	13.60	26.77 26.41	40.52	26.89
+MOP _{1.5K} +MiHo	33.33	79.84	95.97	0.83	2.65	8.06	3.85	46.26	63.85	76.90	62.53	41.50	49.45	84.74	0.05	0.81	4.06	1.71	11.95	24.14	38 57	24.89
$+MOP_{1.5K}+MiHo+MAGSAC+$	56.49	93.87	73.91	37.12	51.37	64.66	51.05	46.18	62.98	75.93	61.70	72.61	63.53	49.82	7.85	16.61	28.40	17.62	11.73	24.34	38.46	24.84
$+MOP_{1.5K}+MiHo+MAGSAC_{\downarrow}$	62.01	94.59	65.19	38.28	52.60	65.75	52.21	45.99	62.61	76.03	61.55	76.38	63.70	43.10	7.89	16.70	28.55	17.72	12.22	25.14	39.37	25.58
$+MOP_{1.5K}+MiHo+NCC$	33.33	80.57	98.19	0.94	2.98	8.26	4.06	48.71	66.23	79.24	64.73	41.50	49.66	86.41	0.20	0.72	4.24	1.72	13.92	27.76	42.53	28.07
	51.07	94.85	84.49	38.69	53.32	66.17	52.73	49.11	66.68	79.14	64.97	69.37	64.43	56.94	8.23	17.91	29.50	18.55	13.23	26.56	41.56	27.12
$+MOP_{1.5K}+MiHo+NCC+MAGSAC_{\downarrow}$ $+MOP_{2.0K}+MiHo$	54.05	95.35	79.72	39.05	53.75	67.08	53.29	48.11	65.27	78.15	63.84	72.27	64.54	51.57	8.86	18.74	30.39	19.33	13.79	27.93	42.57	28.10
+MOP _{2.0K} +MiHo +MOP _{2.0K} +MiHo+MAGSAC _↑	33.04 56.41	79.54 93.80	96.31 74.16	0.73 36 60	2.84 50.65	8.32 64.58	3.96 50.61	46.81 46.58	64.04	77.04 76.97	62.63 62.54	41.01 72.52	49.50 63.73	85.48 50.25	7.09	0.65	3.51 27.63	1.45	12.23	25.00	39.51	25.58 24.95
+MOP _{2.0K} +MiHo+MAGSAC ₁	61.98	94.51	65.32	37.78	52.20	66.18	52.05	43.77	61.47	75.63	60.29	76.34	63.62	43.21	7.09	15.65	27.62	16.83	12.19	25.29	39.28	25.59
$+MOP_{2.0K}+MiHo+NCC$	33.04	80.26	98.53	0.72	2.92	8.22	3.96	49.41	66.57	79.25	65.08	41.01	49.73	87.18	0.09	0.43	3.33	1.29	14.26	27.55	42.34	28.05
$+\mathbf{MOP}_{2.0K} + \mathbf{MiHo} + \mathbf{NCC} + \mathbf{MAGSAC}_{\uparrow}$	51.01	94.83	84.80	40.67	54.64	67.58	54.29	49.51	66.84	79.20	65.18	69.24	64.55	57.14	8.73	18.15	29.83	18.90	13.74	27.29	41.80	27.61
$+MOP_{2.0K}+MiHo+NCC+MAGSAC_{\downarrow}$	53.94	95.33	80.08	40.98	55.12	68.26	54.79	48.44	65.93	78.84	64.40	72.15	64.67	51.75	8.30	18.04	29.50	18.61	13.95	27.41	41.82	27.73
+MOP _{0.5K}	39.06	84.26	91.79	3.90	8.06	17.36	9.77	43.86	61.60	74.73	60.06	55.88	55.43	70.52	0.94	2.80	8.08	3.94	11.59	23.76	37.41	24.25
$+MOP_{0.5K}+MAGSAC_{\uparrow}$ $+MOP_{0.5K}+MAGSAC_{\downarrow}$	57.24	93.18	71.67	37.71	51.40	63.94	51.01	45.92	63.08	76.07	61.69	75.25 78.70	62.63	44.77	6.38	14.53	25.93	15.61	11.60	23.82	37.28	24.23
$+MOP_{0.5K}+MAGSAC_{\downarrow}$ $+MOP_{0.5K}+NCC$	62.62 39.06	93.83 84.78	63.23 93.61	38.39	52.10 7.35	64.99 15.92	51.83 8.98	46.13 46.26	62.95 63.78	75.84 76.33	61.64 62.12	78.70 55.88	62.46 55.34	38.52 71.35	6.95 1.06	14.87 2.59	26.06 7.42	15.96 3.69	11.33	23.26 26.40	37.01 40.26	23.87 26.62
+MOP _{0.5K} +NCC+MAGSAC _†	52.01	93.92	93.61 81.55	39.69	52.92	64.98	52.53	46.26	63.78	76.57	62.12	72.07	63.34	71.35 51.30	8.15	17.77	28.65	18.19	13.18	26.40	40.26	26.62
$+MOP_{0.5K}+NCC+MAGSAC_{\downarrow}$	54.88	94.38	76.93	41.15	54.68	66.53	54.12	44.36	62.47	75.30	60.71	74.55	63.46	46.82	8.50	18.18	29.14	18.61	13.00	25.66	39.18	25.95
$+MOP_{1.0K}$	38.46	84.00	92.58	3.35	7.59	16.61	9.18	44.73	61.53	74.83	60.36	55.19	55.67	72.04	1.20	3.31	7.97	4.16	11.57	24.30	37.83	24.57
$+MOP_{1.0K}+MAGSAC_{\uparrow}$	57.09	93.25	72.11	37.48	52.11	65.28	51.63	44.89	62.35	75.66	60.96	75.01	63.10	45.55	7.58	16.06	26.85	16.83	11.55	23.77	37.78	24.37
+MOP _{1.0K} +MAGSAC↓	62.51	93.94	63.57	38.05	52.43	65.57	52.01	45.04	62.63	75.84	61.17	78.50	63.01	39.28	6.93	15.09	26.63	16.22	11.54	23.37	36.28	23.73
+MOP _{1.0K} +NCC	38.46	84.56	94.44	2.71	6.91	15.75	8.46	47.05	64.47	77.18	62.90	55.19	55.70	73.07	0.87	2.81	7.57	3.75	12.97	26.00	40.34	26.44
+MOP _{1.0K} +NCC+MAGSAC _↑ +MOP _{1.0K} +NCC+MAGSAC _↓	51.83	94.23	82.18	39.67	53.90	66.57	53.38	46.16	64.31	77.16	62.54	71.87	63.86	52.30	8.51	17.97	29.29	18.59	13.55	26.76	41.19	27.17
+MOP _{1.0K} +NCC+MAGSAC _↓ +MOP _{1.5K}	54.67 38.24	94.56 83.88	77.57	40.71 3.08	54.98 7.45	67.61 16.09	54.44 8.87	47.79 44.94	65.37 62.55	77.76 76.09	63.64	74.42 54.86	63.93 55.57	47.55 72.76	8.51 1.10	18.19 3.00	29.18 8.31	18.63 4.14	14.11 11.35	26.94 24.05	40.97 37.46	27.34
$+MOP_{1.5K}$ $+MOP_{1.5K}+MAGSAC_{\uparrow}$	57.01	93.27	72.39	36.96	51.39	64.95	51.10	44.94	62.53	75.77	61.19	74.91	63.04	45.78	7.37	16.18	27.35	16.97	12.09	23.77	37.46	24.28
	62.41	93.27	63.91	38.35	52.66	65.68	52.23	44.62	62.36	75.82	60.93	78.41	63.02	39.50	7.60	16.18	27.21	17.11	11.23	24.32	38.33	24.63
$+MOP_{1.5K}+NCC$	38.24	84.46	94.94	3.02	7.04	15.44	8.50	44.62	65.17	77.45	63.34	54.86	55.50	73.49	0.69	2.52	7.52	3.57	13.52	26.44	41.27	27.08
$+MOP_{1.5K}+NCC+MAGSAC_{\uparrow}$	51.68	94.19	82.65	40.01	53.40	66.29	53.23	47.94	65.35	77.87	63.72	71.66	63.86	52.69	7.95	17.32	29.03	18.10	14.01	26.66	40.67	27.11
$+MOP_{1.5K}+NCC+MAGSAC_{\downarrow}$	54.57	94.57	77.95	41.68	55.50	68.14	55.11	46.51	64.43	77.28	62.74	74.30	64.07	47.83	8.50	17.89	29.29	18.56	13.13	26.39	40.47	26.66
+MOP _{2.0K}	38.02	83.91	93.37	3.87	8.25	17.39	9.84	45.40	62.99	75.70	61.36	54.66	55.71	72.97	0.52	2.63	8.04	3.73	11.46	24.27	37.55	24.43
+MOP _{2.0K} +MAGSAC _↑	56.94	93.43	72.67	37.62	51.55	64.85	51.34	45.79	63.51	76.39	61.90	74.78	63.15	45.77	7.40	15.54	27.11	16.68	12.18	23.95	37.36	24.49
$+MOP_{2.0K}+MAGSAC_{\downarrow}$ $+MOP_{2.0K}+NCC$	62.37	94.12	64.11	38.76	52.96	66.20	52.64	45.76	63.08	76.08	61.64	78.41	63.34	39.45	7.17	15.39	26.74	16.43	12.62	24.61	37.53	24.92
$+MOP_{2.0K}+NCC$ $+MOP_{2.0K}+NCC+MAGSAC_{\uparrow}$	38.02 51.67	84.45 94.27	95.23 82.76	3.74 38.19	8.08 52.34	16.84 65.38	9.55 51.97	48.80 46.74	65.76 64.62	77.81 77.56	64.12 62.97	54.66 71.54	55.67 64.18	73.77 53.01	0.64 8.63	2.40 17.99	7.75 29.47	3.60 18.70	14.07 13.57	26.84 26.82	41.20 40.63	27.37 27.01
	54.51	04.27	82.76 78.12	38.19 40.14	52.34	65.38	51.97	46.74	64.62	77.56 77.85	63.51	71.54	64.18	53.01 48.12	8.63 8.69	17.99	29.47	18.70	13.57	26.82	40.63 39.74	26.27
Z.OK Z.OO MINODAO]	94:31	34.05	10.12	40.14	34.13	07.03	99.17	41.52	05.10	11.65	05.51	74.19	04.31	40.12	0.09	10.43	30.17	19.10	15.14	20.94	39.74	