	MegaDepth								ScanNet									Planar							BMC PhotoTourism																						
Pipeline	Filtered	Precision	Recall	$\mathrm{AUC}_{65}^F$	$AUC_{010}^F$	$AUC_{020}^F$	$\mathrm{AUC}_2^F$	$AUC_{05}^{E}$	$AUC_{010}^{E}$	$\mathrm{AUC}^{E}_{0:20}$	AUC2	Filtered	Precision	Recall	$AUC_{05}^F$	$AUC_{010}^F$	$AUC_{020}^F$	$\mathrm{AUC}_{\mathbb{Z}}^F$	$AUC_{05}^{E}$	$AUC_{010}^{E}$	AUCE 020	0 AUC <sub>2</sub>	Filtered	d Precisio	ion Recall	AUC#	# AUC#	a AUCH	AUC <sup>H</sup>	Filtered	Precision	Recall	AUCF AU	$C_{010}^F$ AUC	E <sub>20</sub> AUC	AUCE:	5 AUCE	0 AUCE	0 AUCZ	AUCF 0(5,	AUCF 0(10,1	$AUC_{0(20,3)}^{F}$	AUC <sup>F</sup> (c)	$\mathrm{AUC}^E_{\otimes(s,\frac{1}{2})}$	$AUC_{0(10,1)}^{E}$	$AUC_{\otimes(20,2)}^{E}$	$\mathrm{AUC}_{\square}^{E}$
$\begin{aligned} & SuperPoint+LightGlue \\ & + MAGSAC_{\uparrow} \\ & + MAGSAC_{\downarrow} \end{aligned}$	0.00 33.98 45.45	88.68 94.36 95.24					54.18	17.03	62.83 64.86 64.68	78.44	61.67 63.44 63.34	0.00 33.86 43.51	68.94 71.40 71.59	94.64 65.35 55.69	6.64 11.80 12.18	16.31 25.21 25.71	29.58 40.34 40.98	17.51 25.78 26.29	16.81 17.45 17.75	33.86 34.53 34.69	50.44 51.51 51.12	33.70 34.49 34.52	0.00 63.71 74.53	74.77 82.23 82.84	90.77 37.16 25.24	41.98 45.18 44.79	57.07 59.65 <b>59.83</b>	63.98 65.71 66.12	63.45 51.93 49.00	0.00 33.51 44.75	89.40 94.37 95.11	71.24 3 50.98 3	17.59 42.5 16.18 52.5 16.33 52.5	5 58.50 67.03 8 67.12		51.32 53.01 53.68	68.40 69.76 70.20	80.64 81.58 81.77	66.78 68.12 68.55	10.47 14.87 15.16	19.25 25.65 25.89	30.69 38.64 38.67	20.14 26.38 26.57	20.82 21.78 22.11		53.27	35.89 37.28 37.56
+ACNe $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	42.49 60.33 67.00	89.55 93.99 94.77	58.25 43.11 36.43	18.64 22.11 21.86		47.60 51.40 51.47			48.31 52.61 53.45	65.69 69.27 70.22		45.93 61.81 66.68	70.40 71.22 71.28	51.60 38.24 33.20		12.32 14.75 15.15	24.67 27.77 27.60	13.75 16.08 16.31	10.71 11.54 11.22	24.01 24.77 24.70	39.35 39.85 40.02	24.69 25.39 25.31	54.28 81.57 86.99	76.67 82.22 82.73	43.05 19.55 13.58	33.27 35.04 35.01		57.83 59.78 59.81	46.10 41.63 40.14	42.75 59.59 66.01		57.89 1 13.24 2 96.78 2	19.50 33. 12.61 37. 13.05 37.		34.62 38.02 38.38	38.91 40.98 41.38	57.54 59.68 60.01	72.56 74.43 74.77	56.34 58.37 58.72	7.07 8.45 8.53	13.98 16.14 16.17	23.81 26.39 26.55	14.95 16.99 17.09				26.51 27.88 28.04
+AdaLAM $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	0.00 33.98 45.45	88.68 94.36 95.24		31.89 37.65 38.50		70.28				78.44	61.67 63.44 63.34	0.00 33.86 43.51	68.94 71.40 71.59	<b>94.64</b> 65.35 55.69	6.64 11.80 12.18	16.31 25.21 25.71	29.58 40.34 40.98	17.51 25.78 26.29	16.81 17.45 17.75	33.86 34.53 34.69	50.44 51.51 51.12	33.70 34.49 34.52	0.00 63.71 74.53	74.77 82.23 82.84	90.77 37.16 25.24	41.98 45.18 44.79	57.07 59.65 <b>59.83</b>	63.98 65.71 <b>66.12</b>	63.45 51.93 49.00	0.00 33.51 44.75	89.40 94.37 95.11	71.24 3 59.98 3	17.59 42. 16.18 52. 16.33 52.			51.32 53.01 53.68	68.40 69.76 70.20	80.64 81.58 81.77	66.78 68.12 68.55	10.47 14.87 15.16	19.25 25.65 25.89	30.69 38.64 38.67	20.14 26.38 26.57	20.82 21.78 22.11	35.29 36.81 37.03	51.57 53.27 53.53	35.89 37.28 37.56
+CC $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	17.52 44.41 54.02	85.07 89.75 90.57	83.18 60.53 50.91	21.37 26.45 27.23	34.66 40.86 1 41.12	19.46 55.68 56.17	35.16 41.00 41.50	15.77 17.60 10.04	53.81 55.45 57.88	68.75 70.34 72.07	52.77 54.46 56.66	32.10 52.82 59.37	61.08 62.21 62.39	64.01 46.48 39.87	6.06 7.36 8.15	14.81 17.28 18.13	26.29 29.54 30.41	15.72 18.06 18.89	13.23 13.34 13.42	26.50 26.83 27.17	40.11 40.60 40.84	26.61 26.92 27.14	75.86 91.30 93.00	13.28 14.91 14.94	16.05 5.86 3.92	4.26 4.52 4.60	6.14 6.62 6.31	7.46 8.16 7.56	8.48 6.29 5.60	n/a n/a n/a	n/a n/a n/a	1/s = 1 1/s = 1	n/sa m/s n/sa m/s n/sa m/s	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a
+CLNet $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	19.20 45.11 54.58	89.47 93.99 94.80	81.49 59.50 50.03	14.45 19.00 18.92	26.46 · 32.42 · 32.56 ·	12.21 18.80 18.97	27.70 33.41 33.48	11.47 14.18 15.90	50.34 54.20 55.23	67.42 70.92 71.45	49.75 53.10 54.19	46.48 60.81 65.79	71.37 70.31 70.38	51.09 39.25 34.17	3.28 3.52 3.35	9.89 9.53	16.54 20.49 20.20	9.28 11.30 11.03	8.36 7.57 8.63	19.71 18.84 20.20	34.16 33.66 34.74	20.75 20.02 21.19	13.37 66.23 76.18	75.24 81.83 82.51	81.23 34.40 23.64	42.51 44.28 43.30	57.38 58.33 57.51	63.96 64.05 63.62	61.27 50.27 47.02	25.55 48.06 56.56	90.51 94.05 94.70	5.15 1 5.50 1 16.96 1	4.32   25)   8.50   31,   8.89   31,	3 40.87 6 47.75 8 47.93	26.94 32.60 32.87	38.71 40.42 40.73	57.43 59.21 59.47	72.43 73.85 74.02	56.19 57.83 58.08	4.88 6.64 6.74	10.34 13.28 13.30	18.75 22.72 22.75	11.32 14.21 14.26	13.19 13.95 13.91	25.05 26.19 26.23	40.26 41.67 41.80	26.16 27.27 27.31
+ConvMatch +MAGSAC† +MAGSAC↓	64.74 74.00 78.18	89.98 92.76 93.38	35.96 27.93 23.73	10.89 12.57 12.59	21.11 : 24.29 : 23.37 :	35.33 38.48 37.32	22.44 25.11 24.43	9.14 90.81 91.13	34.76 37.05 38.20	52.58 54.93 56.40	35.49 37.60 38.58	64.09 73.27 76.37	71.19 70.15 70.20	35.31 27.66 24.45	3.10 3.48 3.55	9.30 10.33 10.54	20.23 21.70 21.78	10.88 11.84 11.95	8.12 8.04 8.19	19.04 18.67 19.39	33.17 32.50 33.20	20.11 19.74 20.26	61.77 83.57 88.39	76.39 81.49 82.09	36.15 17.16 11.96	28.95 30.61 30.69	47.23 47.72 48.40	55.75 56.03 56.71	42.02 37.88 36.94	63.05 72.57 76.82	90.79 93.20 93.75	87.64 1 9.22 1 84.94 1	2.50 24. 4.26 26. 4.37 26.	2 40.52 7 42.61 5 42.71	25.88 27.92 27.98	27.64 29.02 29.56	45.75 47.52 48.03	62.80 64.58 64.99	45.39 47.04 47.52	4.53 4.95 5.08	9.68 10.74 10.80	17.82 19.39 19.60	10.68 11.69 11.83	9.24 9.79 9.99	18.68 19.81 20.14	31.73 33.16 33.52	19.88 20.92 21.21
+DeMatch +MAGSAC <sub>†</sub> +MAGSAC <sub>↓</sub>	78.41	89.69 92.95 93.63			20.90 : 22.49 : 22.79 :	35.54 37.37 37.15	22.06 23.69 23.74	6.48 19.28 19.11			33.45 36.34 37.03	67.95 75.65 78.34	71.35 70.78 70.86	31.57 25.29 22.47	1.67 2.07 1.84	5.39 6.17 6.02	12.97 15.17 14.89	6.68 7.80 7.58	5.30 5.49 5.75	14.05 14.64 15.06	26.74 27.43 28.44	15.36 15.85 16.42	67.00 85.90 89.96		30.72 14.45 10.06	27.29 28.60 28.48	45.32 45.96 46.62	53.88 54.68 55.10	39.30 35.94 35.07	65.02 74.12 78.10	90.67 93.35 93.87	5.56 7.51 1 3.50 1	9.97 21. 1.50 23. 1.72 23.	1 37.29 4 38.87 2 38.99	22.92 24.57 24.75	22.74 24.35 24.66	40.67 42.80 43.14	58.59 60.58 61.16	40.67 42.58 42.99	3.46 4.09 4.12	8.05 9.12 9.02	15.64 16.90 16.94	9.05 10.04 10.03	7.47 7.99 8.16	15.67 16.35 16.70	27.50 28.71 29.02	16.88 17.68 17.96
+FC-GNN $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	*9100	96.68 97.16 97.82		48.54 <b>51.16</b> <b>50.94</b>		78.16	65.12	0.65	67.68 67.53 68.19	80.22 80.04 80.54	66.46	29.05 38.07 41.49	72.94 72.90 73.02	68.78 62.31 58.80	10.12 12.52 12.87	21.36 25.31 25.72	36.13 39.85 40.33	22.54 25.89 26.31	16.71 16.43 16.91	32.70 32.72 33.18	48.64 48.71 49.19	32.69 32.62 33.09	10.93 35.67 46.14	80.58 82.59 83.11	94.31 72.84 61.40	43.62 43.39 44.14	58.80 58.50 59.22	65.44 65.07 65.41	<b>65.54</b> 59.96 57.54	24.98 27.90 30.06	95.84 96.47 96.62	82.67 3 80.19 77.98	9.74 55. 14.45 59. 14.90 60.		50.36	56.96 56.91 56.95	72.37 72.41 72.37	83.04 83.09 83.02	70.79 70.81 70.78	17.60 20.32 20.54	28.78 32.31 32.54	41.72 45.58 45.91	29.37 <b>32.74</b> <b>32.99</b>	24.82 24.86 24.48	49.14 39.89 39.98	56.31 56.49	<b>40.47</b> 40.26 40.32
+GMS +MAGSAC <sub>↑</sub> +MAGSAC <sub>↓</sub>	49.69 58.28	88.28	54.39	33.05	48.61	52.82	48.16	10.58	56.91		55.82	63.35	68.80 67.33 67.45	48.55 37.44 32.34		13.95 16.08 15.59	25.46 28.05 27.35	14.98 17.03 16.54	10.33 10.67 10.05	22.50 23.46 22.15	37.05 37.70 36.79	23.29 23.94 23.00	38.01 76.38 83.88	75.89 81.07 81.59	61.98 26.53 18.15	39.48 41.14 40.66		62.08 62.42 61.18	54.59 46.44 43.73	29.78 51.36 59.33	91.82		9.12 43. 19.08 43.		43.63	42.97 45.10 45.64	69.67 61.61 61.95	72.57 74.02 74.25	58.40 60.24 60.61	9.28 11.87 11.97	17.27 20.92 21.00	27.90 32.14 32.12	18.15 21.64 21.69	16.64 17.96 18.78	31.12		30.00 31.69 32.40
$+MS^2DG-Net$ $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	71.11 79.64 82.92			18.64 17.97 17.12	32.51 31.03 30.69	19.50 17.90 17.38	33.55 32.30 31.73	17.64 10.78 12.14			34.68 38.50 40.30	62.08 72.38 75.29	71.06 72.00 71.97	34.26 26.74 23.64	4.42 4.68 4.66	11.71 12.28 12.41	22.91 23.82 23.77	13.01 13.59 13.61	7.32 6.85 7.45	17.54 17.51 17.84	30.75 30.57 31.01	18.54 18.31 18.77	66.27 84.72 88.47	81.98	28.04 13.03 8.93	30.84 32.46 32.74	47.23 48.12 48.69	55.08 55.55 56.19	40.29 37.29 36.64	69.75 77.93 81.15	90.97 94.10 94.68	90.59 1 23.49 1 20.27 1	6.46 29. 7.37 30. 7.32 30.	2 45.24 4 45.19 2 45.30		25.08 26.74 27.50	41.97 43.95 45.16	58.82 60.98 62.10	41.96 43.89 44.92	5.75 6.10 6.11	11.99 12.39 12.29	20.99 21.24 21.07	12.91 13.24 13.16	7.96 8.85 9.10	16.39 17.52 18.18	28.40 29.85 30.85	17.58 18.74 19.38
+NCMNet +MAGSAC† +MAGSAC↓	16.76 43.53 53.25	89.49 93.89 94.70	83.97 61.29 51.54	14.31 19.93 20.12	26.19 · 33.24 · 33.55 ·	11.78 19.62 19.63	27.43 34.26 34.43	12.18 15.42 15.79	51.59 54.44 55.33	70.67	50.79 53.51 54.08	41.91 57.43 63.07	71.05 70.06 70.13	55.77 42.81 37.09	3.50 4.94 4.27	9.03 12.21 11.59	18.47 23.40 23.13	10.33 13.52 13.00	9.65 9.69 9.41	21.65 21.95 22.00	35.98 36.23 37.12	22.43 22.62 22.84	12.10 65.96 76.23	81.51 82.15	82.95 34.70 23.58	43.53 44.69 <b>45.00</b>	57.90 58.31 58.47	64.50 64.21 64.19	62.22 50.48 47.81	21.88 45.62 54.56	90.58 94.08 94.74	78.93 1 58.17 1 19.20 1	5.39 27. 9.52 32. 9.45 32.	9 42.32 5 48.81 9 48.95	28.26 33.66 33.73	39.35 41.06 41.42	57.99 59.61 59.91	72.76 74.07 74.39	56.70 58.25 58.57	5.15 7.03 7.09	10.98 13.80 13.79	19.61 23.32 23.33	11.91 14.72 14.74	13.70 14.30 14.25	25.67 26.55 26.66		26.72 27.58 27.74
+OANet $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$		90.66 91.54 91.84		3.82 3.57 3.55	8.96 8.17 8.39	18.37 17.52 17.44	9.75 9.79	6.39 6.28 6.42					70.07 62.88 62.91	10.96 8.21 7.71	0.99 0.71 0.84	3.11 2.73 2.82	8.46 7.65 7.91	4.19 3.70 3.85	1.75 2.01 2.36	6.12 6.07 6.47	13.95 13.82 13.96	7.28 7.30 7.59	88.66 94.45 95.72	79.91	9.23 4.75 3.41	17.10 17.31 17.34	33.35 33.53 33.68	42.24 43.24 42.89	25.48 24.71 24.33	89.90 91.90 92.82	91.05 91.72 92.00	10.30 8.50 7.58	4.18 10: 3.95 9: 4.03 9:	0 20.86 3 20.42 2 20.33	11.75 11.43 11.39	10.32 10.61 11.08	21.97 22.65 23.27	37.85 38.89 39.54	23.38 24.05 24.63	1.54 1.41 1.47	3.97 3.84 3.84	8.62 8.38 8.36	4.71 4.55 4.56	3.21 3.31 3.63	7.79 8.04 8.51	15.58 16.16 16.55	8.86 9.17 9.56
+MOP $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	0.90 34.31 45.80	94.32 95.22	99.29 71.63 60.16	31.71 37.41 37.76	48.32 54.22 54.60 i		48.18 53.93 54.08	15.95 17.54 17.27	63.18 64.87 64.76		61.99 63.51 63.39	10.20 38.02 47.39	68.85 71.09 71.23	89.20 62.97 53.41	7.37 11.58 11.98	17.44 24.68 25.10	31.03 39.66 40.25	18.61 25.31 25.77	17.07 17.00 16.77	33.48 33.89 33.39	49.69 50.31 49.54	33.41 33.73 33.23	7.89 66.70 77.37	74.92 82.28 82.87	90.37 37.23 25.24	42.62 44.56 44.64	58.06 59.30 59.66	65.41 65.61 66.09	64.11 51.67 48.91	1.66 34.13 45.34	89.53 94.30 95.02	08.46 2 70.72 3 59.47 3	18.41 43.1 15.52 51.1 15.72 51.	0 59.47 7 66.33 6 66.39	43.93 51.07 51.19	51.33 53.08 53.44	68.24 69.66 69.89	80.46 81.36 81.49	66.67 68.03 68.27	10.82 14.60 14.75	19.88 25.22 25.40	31.59 37.99 38.03	20.76 25.94 26.06	20.79 21.86 22.18	35.37 36.92 36.96	53.19	35.94 37.32 37.48
+MOP+MiHo +MAGSAC† +MAGSAC↓		88.72 94.35 95.25						17.18	62.75 64.70 64.54	78.25	61.60 63.38 63.19	6.48 36.02 45.52	68.77 71.27 71.44	<b>91.71</b> 64.18 54.57	7.04 11.52 11.93	17.13 24.89 25.11	30.62 40.01 40.37	18.27 25.48 25.80	17.09 17.69 17.82	33.97 34.63 34.79	50.28 50.99 51.01	33.78 34.44 34.54	6.98 66.55 77.27	74.83 82.24 82.82	90.77 37.21 25.26	42.61 44.96 44.63	58.31 59.54 <b>59.75</b>	65.36 65.73 66.81	64.26 51.86 48.99	0.98 33.87 45.09		70.93 3 50.68 3	18.05 43. 16.02 51. 16.07 51.				68.32 69.77 70.09	80.54 81.51 81.64	66.70 68.17 68.47	10.66 14.79 14.97	19.60 25.55 25.67	31.16 38.50 38.45	20.48 26.28 26.36	20.63 22.09 22.16	35.19 37.08 37.15	53.52	35.78 37.56 37.64
+MOP+MiHo+NCC $+MAGSAC_{\uparrow}$ $+MAGSAC_{\downarrow}$	0.30 25.40 29.81	85.90 96.32 96.76	84.95 80.53	48.61 <b>49.61</b>	35.09 64.00 64.79	77.16	63.85	12.53 12.28 11.62	60.76		68.06 68.00 67.48	6.48 38.78 44.78	65.80 71.35 71.48	89.20 61.95 55.94	5.06 14.22 14.45		25.19 42.85 42.94	28.45 28.61	18.26 18.85 19.45	35.70	51.95 51.95 52.50	35.21 35.50 36.09	6.98 38.61 48.20	76.09 82.87 83.14	73.00 61.91	40.15 43.90 44.47	55.95 58.93 58.45	63.54 65.49 64.94	64.40 60.33 57.44	0.98 33.03 37.83		3.71 4 38.90	15.86 28. 11.10 56. 11.81 88.	2 69.50 4 70.80	55.61 <b>56.35</b>	57.05 56.93 87.01	72.40 72.42	89.33 83.02 83.03	71.02 70.78 70.83	5.41 18.36 18.73	10.91 29.56 29.99	42.25 43.81		24.25	39.91 39.66 <b>39.89</b>	56.67 56.38 86.84	
+MOP+NCC +MAGSAC↑ +MAGSAC↓	0.90 25.98 30.42	85.68 96.22 96.62	84.15 79.65	47.18 48.03	34.39 62.52 63.24	75.19 75.60	35.29 61.63 62.29		67.27 67.96 68.35	04140	65.73 66.42 66.78	40.63 46.41	65.79 71.10 71.28	and the same of		12.79 27.78 <b>27.82</b>	42.11		17.62 18.53 18.58	34.74 35.08 35.44	51.55 51.18 51.53	34.64 34.93 35.18	7.89 38.77 47.89	75.81 82.77 85.08	72.88 62.19	44.31	56.23 58.60 59.32	63.26 64.59 65.67	64.88 60.22 57.87	1.66 33.41 38.13	95.72			68.33 9 68.97	54.56 55.27	56.65	72.00 72.12 72.05	83.27 82.80 82.76	71.12 70.56 70.49	5.35 18.13 18.58	10.86 29.10 29.71	19.19 41.73 42.34	11.80 29.65 30.21	24.27 24.46	49.06 39.81 39.87	56.44 56.30	40.46 40.17 40.21
+NCC +MAGSAC† +MAGSAC↓	0.00 38.44 44.55	77.98 92.71 93.20	66.61	38.49		55.04		12.64	59.52	73.46	57.41 58.54 59.07		64.93 71.18 71.31			11.93 26.06 25.65	23.83 40.75 40.42	13.49 26.51 26.22	17.12 17.32 18.08	34.54 34.22 34.15	51.04 50.79 50.33	34.23 34.11 34.19	0.00 67.28 74.87	60.92 81.69 82.41			52.92 55.82 56.20	60.51 62.58 63.17	55.68 48.16 46.35	0.00 45.90 52.25	92.32	34.44 1 57.01 3 50.79 3	13.55 25. 10.89 44. 11.27 45.	7 58.81	44.82	46.53 47.66 47.55	62.53 63.28 63.18	75.11 75.54 75.48	61.39 62.16 62.07	4.51 13.10 13.14	9.58 22.28 22.37	17.56 33.23 33.48	10.55 22.87 23.00			47.30 48.16 48.09	32.68 33.47 33.51