		MegaDepth							ScanNet							Planar					IMC PhotoTourism																				
Pineline	Filtered	Precision	Recall	AUC <sup>F</sup>	$AUC_{010}^F$	$AUC_{020}^F$	AUC <sub>2</sub> ≥	AUCE A	$AUC_{010}^E$ $AUC_0^E$	AUCZ	Filtered	Precision	Recall J	UCF AT	$C_{010}^F$ AUC	F AUC	AUC <sup>E</sup>	$AUC_{010}^{E}$	$AUC_{020}^E$	$AUC_{\angle}^{E}$	Filtered P	recision R	lecall A	UCH AUCH	$AUC_{015}^H$	AUC <sup>H</sup> Filt	ered Precisio	on Recall	AUCF A	UCF AUC	F AUC AUC A	AUCF AUCF	$AUC_{0(10.1)}^{F}$	$AUC_{0(20,2)}^F$ AU	JC <sup>F</sup> AU	$C_{05}^E$ $AUC_0^E$	10 AUCE	n AUC <sub>∠</sub>	AUCE A	$AUC_{0(10.1)}^{E}AU$	CE AUC
DeDoDe2		68 13	9.99														-						_		_							U(x, y)							0(1,2)		
			83.77	0.23	0.84	3.27	1.45 5	1.30 6	6.84 78.43	65.52	0.00	45.81	56.01	1.00 0.	14 1.3	0.50	12.26	23.67	35.46	23.80	0.00 6 42.86 7	1.15 <b>94.</b> 2.71 69.		2.06 4.37	7.16	26.95 0.0 42.09 41.8		80.26	0.13	1.76 3.40	1.43	0.12	0.54	2.04 0.9	0 55.8	71.30	82.11	65.70	23.82	33.70	39.93
	49.19	00.00		12.11	20.25	41.73 2	20.01	0.00	2.92 76.37	61.72	50.15	00.00	00.91	.40 0.	13.6	6.76	10.64	21.90	30.14	22.00		0.53 40.1		35.07	41.01				9.26 2	39.33	23.27	2.98	1.01	10.23 8.5	0 50.3	67.20	19.25	60.59	10.50	33.15	
	49.19 53.54	94.44	71.22	39.43	54.25	68.00 5	3.89 4	4.29 63	2.72 76.55	61.19	64.63	58.01	39.69	.85 14.	28 25.56	15.23	10.36	21.35	34.25	21.99	69.64	0.53 40.1	75 36	5.20 50.80		46.35 53.2 43.98 57.3		68.12	36.61 5	1.71 66.16	51.49	14.51	24.99	37.92 25.8		66.51	78.82	64.96	18.40	32.84 4	33.65
		94.95		39.86 0.23	0.84	68.19	4.19 4	4.84 6	2.84 76.46	61.38	68.48	57.87	34.39	14.	24 25.70	15.34	10.21	21.29	34.23	21.91	77.33	1.00 30.	81 36	5.24 50.97				62.43	37.18 5	2.39	52.12	14.69	25.31	38.43 26.1	4 49.6	2 66.45	78.61	64.89	18.27	32.61 4	.61 33.50
				42.09			1.45 5	1.30 6	6.84 78.43	60.82	0.00	45.81	99.20	.00 0.	14 1.3	0.50	12.26	23.67	35.46	23.80		1.15		2.06 4.37				77.33	0.13 35.94 4	0.76 3.40	1.43	0.12	0.54	2.04 0.9	0 55.8	71.30	82.11	60.75	23.82	39.70	39.93
		92.08	79.43	42.09	99.23	66.60	4.70	1.22 6	6.32 78.03	65.19	55.42	57.43	50.08	18.	02 28.75	18.48	13.64	25.47	37.91	28.67	63.94 81	1.71 47.5	91 41	1.12 55.13	61.47	51.41 44.0	9 89.64	77.33	35.94 4	5.79 61.00	48.58	16.31	26.21	37.59 26.7	63.0	68.56	80.12	67.23	22.63	21.60	1.85 38.01
	47.33	92.72	72.49	43.19 15.64	56.92	68.25	6.12 5	1.13 6	6.84 78.41	65.46	60.83	56.95	42.74	17.	96 28.63	18.46	12.38	24.30	37.07	24.58	73.76	2.57 35.	35 41	28 55.45	62.11	48.55 49.7	1 90.16	69.92	37.22 5	0.31 62.33	49.96	16.82	27.05	38.84 27.5	7 52.2	67.86	79.61	66.57	22.14	37.14	.98 37.42
		87.92		15.64	26.15	39.36 2	7.05 48	9.80	0.81 77.89	64.50	31.95	51.89	74.22	1.25	18 4.51	1.99	10.66	21.80	33.40	21.95	15.48 70			0.24 41.98	48.11	52.78 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
	44.82 49.51	94.39	76.46	48.93	62.43	73.52	1.62	0.58 6	6.25 78.12	64.99	58.93	56.31	45.47	.52 15.	40 25.1	16.02	10.83	22.07	34.06	22.32	63.88	2.26 48.1	52 41	1.64 55.56	62.20	51.98 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
		24.50	70.37	W.M	62.36		2.45	9.04 6	0.15 77.60	63.95	63.58	55.80	39.06	.38 15.	21 25:17	15.92	11.26	21.60	33.41	22.09	73.93	35.	89	54.67	61.50	48.41 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
			79.56	2.63	7.17		9.05 4	2.04 58	0.96 73.65	58.55	60.14	60.30	50.42	1.48 1.	54 4.83	2.27	8.27	18.63	31.40			2.80 79.		0.28 41.24	47.46	49.27 43.2		77.00	5.11 1	19.75	11.72	1.23	3.03	6.76 3.6	7 47.2	64.32	77.00	62.85	17.10	31.23 4	.86 32.06
	50.61			31.25	45.60	60.06 4	5.63 4	1.64 5	9.48 73.51	58.21	71.32	62.43	36.05	.48 8.	32 17.18	9.66	8.04	18.13	30.52	18.89	65.91 80	0.23 45.	16 40	1.06 54.43	60.70	50.09 54.9	7 93.15	64.44	30.15 4	1.18 59.08	44.47	12.07	21.14	32.74 21.9	8 46.5	63.51	76.25	62.10	16.83	30.89 4	.13 31.62
	54.82		61.88	31.89	46.37	60.86	5.37 43	2.04 5	73.57	58.42	74.61	62.36	31.47	1.53 8.	92 18.03	10.16	7.92	17.29	29.41	18.21	74.93	33.	74 35	54.31	60.34	47.00 58.9	93.58	58.93	3U.53 4	59.57	44.92	12.42	21.54	33.01 22.3	46.4	63.28	76.10	61.95	16.56	30.73	.13 31.60
		85.97	50.05	14.70	24.35	37.05 2	5.37 3	2.80 4	8.39 61.68	47.63	67.44	64.24	46.67	.23 7.	08 17.03	8.78	8.77	19.69	33.01	20.49	78.52 6	8.37 31.	49 11	1.07 24.15	32.59	24.83 61.9	2 89.17	58.11	16.34 2	3.74 44.34	29.81	4.03	9.26	17.90 10.4	0 42.0	58.73	71.67	57.49	12.36	25.08 4	.48 26.31
	72.17	88.24	42.96	25.91	37.31	49.64	7.82 3	3.03 4	8.40 61.77	47.74	76.91	m.09	32.28	1.60 11.	88 22.91	13.13	9.22	20.65	32.86	21.21	88.64 7.	3.33 18.	48 15	Lis8 34.58	42.11	28.68 69.2	92.45	48.89	28.36 4	2.43 57.11	42.64	8.45	16.69	28.50 17.8	8 41.8	58.51	71.58	57.31	12.43	24.87 4	.19 26.16
	74.50	88.60	39.86	26.28	37.81	50.05	8.05	3.04 4	8.28 61.39	47.64	79.63	0.02	27.98	125 11.	50 22.63	12.76	8.55	19.64	33.06	20.42	91.15	8.92 14.3	83 20	1.19 34.56	41.81	27.85 71.9	4 92.86	44.66	28.85 4	3.04 597.59	43.15	8.77	17.05	28.89 18.2	9 42.1	38.59	71.61	87.44	12.67	25.14 4	.45 25.33
	51.58	88.40	65.18	13.79	24.57	38.77 2	3.71	8.90 5	6.86 71.34	86.70	62.96	61.26	48.90	.44 4.	57 11.7	5.93	8.71	19.85	33.12	20.56	63.15 7: 79.35 8	3.22 46.1	84 22	248 37.13	45.09	37.89 54.5 40.20 63.4		65.11	14.04 2	1.07 41.99	27.37	4.14	9.42	17.97 10.5	1 44.9	62.32	75.68	60.98	15.23	28.91 4	29.96
	60.86	93.17	55.48	28.70	43.05	57.88 4	3.23 3			55.20 55.29	73.43	63.02	22.91	1.47 9.	58 20.71	11.25	8.41	19.28	32.50	20.06	79.35	28.1	83 30	157 46.89	54.52			54.64	30.37 4	59.96	45.13	11.16	20.84	32.50 21.4	44.0	61.85	75.33	60.41	14.82	28.47 4	29.52
	64.13 35.70	93.66 88.47	51.05 84.89	1.98	44.49	10.00	4.58 3 5.81 <b>8</b>	8.18 5	6.34 71.34 0.16 80.40		16.48	63.05	29.51	10 0	30.8	11.40	8.60	19.43	32.42	20.15	31.79 7	3.66 84	44 25	1.28 45.12	34 93	37.50 66.7 42.00 39.9		49.94	2.81	5.50 60.33 5.15 13.08	45.51	11.43	3 19	6 34 3 6	0E 44.0	61.80	75.35	60.40	15.17	28.52 4	29.64
			04.00	1.365	4.56			0.55 C		67.65	46.24	00.08	63.04	.10 0.	79 3.48	1.46	10.00			27.65	52.83	5.00 84.	20 15	1.39 29.42	34.36			80.50	2.51	13.08	7.30	1.53	3.19	0.54 3.6	9 57.1	72.31	62.80	70.72	20.00	40.95 B	7.66 41.18 5.25 40.13
		95.01 95.28	81.14 79.07	CO.77	64.71		2.33 S 3.77 E	2.21 6	7.98 79.38	66.52	62.27	62.71	48.62	1.25 20.	70 32.61	21.20	14.02	27.42		27.65	62.83	1.42 61.5	91 35	55.28	62.04	54.72 46.7 51.79 48.4		76.07 73.85	45.45	5.85 68.70 7.78 69.74	55.34 57.23	21.11	32.40 33.08	GL 55 32.7	55.8	70.99	81.75	en.54	20.00	20.00	01 00.13
				10.59			0.52 4		4.52 76.03	63.31	64.99	50.04	44.70	0.17 0.			11.12	21.93			35.76 7	51.3	00 04	54.31	40.87	43.60 41.3				1.39 24.92		266	5.79	11.19 6.5	50.0	70.77	78.21	65.32	23.66	33.46	£.06 36.27
	50.03			10.00	19.24			01.00			34.47	02.04	72.11	.17 0.			11.12	21.93	33.04			1.00 74.	36 24	34.35	40.07				1741 1	1.30 24,92	25.50	2.66	0.19	11.19 6.5	0 50.9	66.79	16.21	60.32	20.97	30.11	08 35.61
	54.28	92.41	66.79	40.10	61.16	71.89 6	0.34 5	0.12 6	5.11 76.24 4.55 76.17	63.82	65.71	50.90	37 11	10.	69 25.83 58 25.80		10.02	21.01	33.35		67.33 86 76.02 8	0.63 42.1		3.47 52.18 3.47 52.82	50.00	48.08 55.3 45.53 59.3		62.59	40.34	5.28 66.60 66.10	62.86	10.28	29.10	41.28 29.5	30.0	65.87	77.14	64.45	20.61	30.14 5	35.61
		92.94	79.43	10.19	01.00	66.69 5	4.70 5	1.00	76.17	63.26	60.71	57.40	50.00	10.	05 25.80	16.26	10.36	21.36	02.01	21.04	63.94 81	1.71 47		52.82	63.47	60.00 89.3	92.79	37.27	40.14	66.10	40.50	16.64	29.05	97.50 96.5	49.7	60.54	00.10	62.03	20.14	34.70	35.25
	47.33	92.08	79.43	42.00	20.00	00.00	C 10	1.22 6	0.32 78.03	65.19	00.42	50.05	10.74	18.	02 28.75	18.48	10.00	20.47	07.07	20.07	73.76	47.5	05 41	55.13	01.47	44.0	89.64	rr.33	30.94 4	61.00	48.58	16.31	20.21	31.09 26.7	50.0	68.56	20.12	61.23	22.03	37.03	38.01
		78.18	07.70	0.70	2.27	6.76	0.12	0.10	78.41	00.46	60.83	40.03	92.79	17.	28.6	0.02	12.38	24.30	35.92			7.83 891	30 4	1.86 22.73	28.08	48.55 49.7 38.81 17.9	7 76.35	05.92	1.10	3.56 9.78	49.95	0.69	1.93	460 24	52.2	67.86	13.61	60.57	22.14	37.14	1.98 37.42 1.88 39.89
	42.39	02.14	79.74	45.07	59.97	70.01	7.99	1.44 6	7.07 79.03	65.02	56.17	57.90	10.01	0.00	75 29 51	19.20	12.63	24.30	27.25		63.99 83	1.74 48.0		150 22.73 150 55.05	28.05	38.81 17.9 52.27 45.0		77.20	20 12 5	9.78	51.60	19.22	29.00	40.72 29.2		60.35	80.75	67.93	22.70		1.29 38.28
	47.61	01.00	70.00	10.77	00.00	71.50	0.50	1.00	7.08 78.48	65.59	61.07	57.00	10.07	20 17	25.01	10.45	10.50	04.03	07.20	04.00	73.00	950	05 46	09.30	02.41	40.0	0 01.13	60.00	40.00	04.31	50.00	10.22	20.00	41.70 20.0		60.53	00.07	67.40	22.10	97.45	1.76 37.90
		73.39	72.90	0.49	1.47	4.43	2.13	1.22 6	78.48	67.04	7.12	47.00	96.20	17.	25.79	0.69	12.02	29.61	95.50	29.70	16.32 6	5 17 90	76	215 14.27	18 39	32.89 10.7	1 71.24	96.52	0.79	1.65 5.96	2.66	0.28	1.03	3.02 1.4		68.80	80.27	70.07	22.49	37.40 S	37.90
	42.13	00.62	79.61	42.01	56.48	69.00	5.96	162 6	7.02 78.55	65.73	55.72	57.40	50.10	47 17	10 29.01	19.17	12.20	25.49	20.00	25.73	63.87	2.06 48.7		79 55 60	62.22	52.10 44.4		77.44	27.60 5	0.60 69.55	50.20	17.49	27.59	39.19 28.0		68.00	80.36	67.55	22.55	37.64 5	91 38 03
	47.44	93.33	72.79	44 17	57.77	69.09	7.01 5		6.47 78.15	65.23	61.01	57.22	42 99	87 18	18 29.2	18.76	12.38	24.38	37.46	24.74	73.61 8	2.50 35	81 41	1 28 54 97	62.00	48.52 49.9	3 90.30	70.09	38.81 5	63.82	51.49	18.04	28.58	40 44 29 0	2 52.4	68.09	79.76	66.77	22.37	37.39 5	151 37.76
		70.48	05.16	0.46	1.43	4.39	200	221 6	7.95 79.80	66.60	7.12	46.70	95.96	0.02	25 1.79	0.60	12.00	24.70	27.24	24.00	16.32 6	694 94	16	32 14.42	18 26	22.70 10.7	1 67.47	92.40	0.25	50 5.00	2.62	0.26	1.00	200 14	2 54.4	70.12	91.41	69.67	22.59	27.06	29.41
	44.22	93.50	77.88	39.73	53.91	66.35	3 33 5	0.47 6	6.60 78.81	65.29	54.59	57.63	51.95	26 17	35 28.21	17.94	13 18	25.43	38 18	25.60	49.00 8	1.65 69.1	58	19.42	62.38	87.49 48.3	5 90.38	72.00	32.47 4	336 57.78	45.20	14 19	22.98	33 67 23 6	2 51.5	67.26	79.14	65.99	21.53	35.93 5	26.41
	47.70	94.09	73.43	41.24	55.47	67.90	4.87	0.18	6.74 79.17	65.36	58.65	57.38	46.31	58 17	75 28.97	18.43	12.93	25.40	37.92	25.42	56.93	1.94 59	11	104 55.41	62.00	NS 14 52.0	7 90.97	67.20	33.99 4	59.08	46.63	15.12	24.16	34 99 24 7	6 50.8	66.70	78.75	65.42	20.93	35.22 5	35 35.83
		74.90	93.56	0.62	2.10	6.57	3.10 5	1.49 6	7.56 79.45	66.17	13.11	48.28	92.56	108 0	37 2.36	0.94	12.59	24.48	37.16	24.74	21.44 60	9.47 93	37 14	41 22.33		39.47 17.9	7 72.11	91.57	1.01	3.40 9.55	4.65	0.66	1.88	452 23	5 54 6	70.27	81.51	68.81	22.98	38.25	1 96 38 73
	44.54	94.04	77.47	41.51	55.52	67.59	4.87 5	134 6	7.31 79.02	65.89	54.76	58.05	52.20	883 18	04 29.20	18.71	13.45	26.04	38.98	26 16	49.06	2.31 69.5	97 41	69 56.21	62.82	N7 67 48 8	91.09	71.76	33.64 4	61 59 13	46.46	14.76	23.95	34 91 24 5	4 51.7	67.55	79.37	66.24	21.89	36.33 5	41 36.87
	47.93	94.61	73.15	42.42	56.78	60.54 5	6.25	0.28 6	6.66 78.81	65.25	58.71	57.93	46.82	114 18	46 20.0	19.07	13.20	25.97	38.65	25.94	57.12	59.5	30 41	.07 55.58	62.58	54.63 52.3	3 91.62	67.14	34.75 4	7.83 60.23	47.60	15.42	24.79	35.94 25.3	8 51.4	67.18	79.04	65.88	21.59	35.92 5	.95 36.48
		83.39	37.19	0.17	0.59	3.01	126 3	1.81 4	7.82 62.60	47.41	70.63	54.46	34.68	00 0	0.60	0.23	479	11.44	20.69	12.31	77.04 66	6.53 27	37 6	0.00	0.00	684 713	5 80.62	38 93	0.02	1.31 2.09	0.81	0.03	0.17	0.97 0.3	9 33 1	49.63	63.99	48 92	9.42	19.96 3	1.40 21.26
+MS <sup>2</sup> DG-Net+MAGSAC+		91.85	31.19	30.24	44.13	58.20 4	4.19 3	0.71 4	6.46 60.82	46.00	81.00	57.11	21.56	2.09 5.	94 13.15	7.08	5.01	10.99	20.00	12.00	88.92	7.26 16.0	02 20	0.75 37.39	45.84	30.00 78.8	1 88.87	32.30	22.42 3	1.75 48.27	35.14	6.71	13.31	23.12 14.3	8 32.7	48.97	63.09	48.26	9.49	19.69 3	1.93 21.04
	81.11	92.37		30.56	44.84	59.14 4	4.85 3	1.38 4	7.21 62.11	46.90	82.81	56.63	18.89	5.50 6.	30 13.05	7.30	4.64	10.87	19.70	11.74	91.34 7	8.02 12.1	52 15	0.80 35.07	43.94	27.83	89.25	29.69	23.30 3	.80 49.29	36.13	7.00	14.08	24.21 15.1	2 32.4	48.53	62.82	47.95	9.30	19.54 3	1.80 20.88
+NCC	0.00	60.30	84.56	0.25	0.86	3.27	1.46 4	3.07 5	7.24 68.98	56.43	0.00	44.38	97.96	0.00 0.	13 1.33	0.49	11.12	22.23	34.22	22.53	0.00 51	1.93 75.1	56 1	1.94 4.32		22.24 0.0	0 56.21	84.22	0.13	0.76 3.40	1.43	0.11	0.54	2.04 0.9	0 40.5	2 55.51	68.29	54.78	15.90	27.78 4	.67 28.45
		85.66	59.07	31.40	43.43	54.87 4	3.24 4	1.12 5	5.36 67.32	54.60	56.40	56.51	48.34	.22 15.	57 25.16	16.32	11.86	23.22	35.63	23.57	73.00	9.77 34.0	06 35	36 53.06	59.95	46.36 58.0	8 83.29	53.56	22.84 3	3.87 45.79	34.16	9.19	15.80	24.65 16.5	5 38.8	7 53.17	66.10	52.71	15.88	27.20 4	.51 27.86
		86.30	53.65	32.24	44.42	55.85 4	4.17 4	0.54 5	4.95 67.21	54.23	60.89	56.18	42.43	.33 15.	76 25.23	16.43	10.63	22.06	34.69	22.46	79.52	0.12 25.5	94 37	.97 52.27	59.12	43.82 63.0	2 83.78	47.56	23.62 3	1.60 46.29	34.84	9.58	16.47	25.36 17.1	4 37.9	52.29	65.41	51.88	15.69	26,70 3	.80 27.40
+NCMNet	36.94	87.89	81.66	2.92	6.99	16.99	8.97 43	2.65 6	0.25 73.82	58.90	60.19	61.93	52.13	.12 3.	17 8.23	4.17	10.25	20.90	33.67			2.49 80.1	82 25	0.41 41.25	47.46	49.74 41.6	7 89.05	80.63	5.63 1	1.46 21.35	12.81	1.62	3.61	7.47 4.2	3 47.6	64.92	77.71	63.42	17.21	31.44 4	32.30
+NCMNet+MAGSAC <sub>7</sub>	49.86	93.73	69.12	33,36	46.92	60.81 4	7.03 4:	2.28 6	0.33 74.12	58.91	71.50	64.25	37.63	1.76 10.	89 20.95	12.21	9.14	19.68	33.06	20.63	64.81	0.00 46.3	39 41	1.03 54.30	60.36	50.52 53.5	7 94.10	67.48	30.22 4	1.50 59.46	44.75	11.69	20.58	32.14 21.4	7 47.0	64.16	77.01	62.73	16.70	30.59 4	.33 31.54
+NCMNet+MAGSAC <sub>↓</sub>	54.12	94.22	63.57	33.69	47.70	61.62 4	7.67 4	2.20 6	0.14 73.90	58.75	74.98	64.17	32.65	1.51 10.	86 21.13	12.17	9.70	20.26	33.24		74.28 80	0.16 34.	18 40	1.93 53.58	59.95	47.16 57.6		61.71	30.50 4	1.87 59.72	45.03	11.95	20.90	32.36 21.7	4 46.9	64.09	76.83	62.61	16.86	30.71 4	.40 31.66
+OANet		87.93	38.28	3.71	9.72	20.31 1	1.25 3	2.92 4	9.68 65.06	49.22	79.95	49.08	19.35	1.41 1.	34 4.65	2.15	4.03	9.58	17.93			1.27 25.5	80 8	6.63 12.80	16.68	15.23 74.8	7 88.18	36.17	5.05 1	1.21 21.62	12.63	0.96	2.75	6.66 3.4	6 34.6	2 52.33	67.66	51.54	10.37	21.19 3	1.17 22.58
+OANet+MAGSAC+	76.92	92.92	32.98	22.00	35,36	50.10 3	5.82 3	1.14 4	8.67 64.11	47.97	83.90	49.99	14.59	.36 4.	41 10.25	5.35	3.41	9.05	16.79	9.75	88.91 7	9.18 15.3	73 25	38 42.74	51.23	33.77	92.73	31.02	19.89 3	2.77 47.64	33.43	6.33	12.64	21.86 13.6	1 34.0	51.72	66.98	50.90	10.17	20.82 3	.62 22.20
	78.79	93.36	30.42	22.62	36.16	50.62 3	6.47 3	1.54 4	8.91 64.56	48.33	85.16	49.90	12.90	.42 4.	49 10.3	5.42	3.44	8.79	16.63			9.88 12.		28 42.02		32.30 81.1		28.50	20.26 3	3.24 48.20	33.90	6.45	12.80	22.20 13.8	2 33.6	7 51.35	66.72	50.58	9.84	20.55 3	.43 21.94
			GOV AND		and a		-		01.00	25.00				4	10.0	9.42			road			14-		44.04	Anna A		200.00	20.90	AUGUST U	40.40	30.00	0.49									