		MegaDepth						ScanNet								Planar							IMC PhotoTourism																		
Pipeline	Filtered	Precision	Recall	AUC <sup>F</sup>	$AUC_{010}^F$	$AUC_{920}^F$	$AUC_2^F$	AUC <sup>E</sup>	AUCE AU	$C_{020}^E$ AUC	E Filtered	Precision	Recall .	AUC <sup>F</sup> AUC	10 AUC 5	AUC <sup>F</sup>	AUC <sup>E</sup>	AUCE A	$UC_{020}^E$ AU	C <sub>∠</sub> <sup>E</sup> Filtered	d Precisio	n Recall	AUC# AU	$C_{010}^H$ AUC	$C_{015}^H$ AUC $_{\square}^H$	Filtered	Precision R	ecall AUC	AUCF	$AUC_{020}^F$	AUC <sup>F</sup> AU	CF AUCE	10.1) AUC F	auc <sub>D</sub>	AUCE A	$AUC_{010}^E$ 2	$UC_{920}^E$ At	JC <sup>E</sup> AUC <sup>E</sup>	AUCE AUCE	AUCE 120.2	$AUC_{\square}^{E}$
	0.00	92.95	9.73				****								-							****			-							0(1,9)		-					-(10)	.,	
			60.76	39.42	80.31	10.17	54.83	45.85	50.30 67.1	2 49.70	10.00	65.50	54.00	11.44	18.01	9.90	7.28	17.44 30	.29 18.3	52.20	76.17	44.12	37.49 53.6	5 56.2	4 45.24	41.51	93.63	32.94	47.85	62.38 4	17.72 12.	86 15.67	26.57	16.70	10.70	8.65	3.89 58.9	20.50	35.43	10.00	27.58
		95.55		20.01	33.71	400.47	34.30	31.00				07.49	04.09	3.03					.70 18.8		11.10	28.14	34.53 51.0			48.84	96.33 52.5		30.30	34.79	15 15 10				42.78	0.27			29.42		27.79
	47.23 51.60	96.55	54.51	24.46	38.80	54.19	39.15	32.47	51.46 67.5			67.69	41.04	4.50 10.80	20.42	11.91					80.77	28.14				48.84 52.76	96.33 52.3		45.17	60.30	15.15 10.	84 19.67	31.22	20.58	42.90 6		4.23 59.2 4.71 59.6		26.62		
		96.05		24.74	39.06	54.59	39.46	33.42		8 51.73	62.63	67.70	37.10	4.37 10.92	20.92	12.07					81.20	22.17	35.35 51.5		8 41.86				45.71	60.71 4	15.64 11.	15 19.98	31.57	20.90	43.29 6	0.94 7	4.71 50.6	5 14.58	27.21		28.30
			\$9.72	39.42	55.31	60.76	54.83	45.85	62.99 76.8	61.79		65.50	93.05	4.75 11.44	21.96		12.84	26.49	.04 26.75		76.17	90.91	37.49 53.6		60.79	0.00			47.85	62.38 4	17.72 12.	.67 22.57	34.88	23.37	52.89 6	8.66	9.96 67.1	7 20.50	35.43	52.34	35.(0)
		95.63	86.88	47.29	63.00	75.28	61.86	45.35	63.11	61.82	33.48	68.44	65.40	8.46 18.82		19.55	13.20	26.73 41	.02 26.58	49.92	81.77	52.73	40.62 56.8	2 63.4	53.40	15.81	96.29 86.7	75 44.16	59.43	72.47	8.68 18.	.90 30.79	44.35	31.35	93.23	0.39 8	0.61 67.7	8 20.84	36.01	82.91	30.58
	23.72	96.23	79.40 82.54	47.26	62.83	75.30	61.79	46.95 38.10	64.83	63.35	40.67	68.40	57.83	8.90 19.24	31.57	19.90	12.85	26.58	.04 26.83	61.56	82.42	40.39	41.59 56.4	3 63.65	0 7.57	23.19	96.74 79.8	58 44.40	89.65	72.65	8.91 19.	21 31.01	64.89	31.60	83.71 6	9.65	1.11 68.1	7 21.02	36.22	53.35	.95.87
		86.24	82.54	28.81	43.23			38.10	54.86 68.8			54.91	61.10	4.10 9.54	17.55	10.39		18.66 25				12.65	3.91 6.3	1 7.40	0 7.57	n/a	n/a n/a	n/a	n/a	n/a n	1/a n/s	a n/a	n/a	n/a	n/a n	ı/a n	/a n/a	n/a	n/a	n/a	n/a
		88.36	72.49	34.50	48.73		48.27	39.14	56.25 69.5			55.91	44.51	5.39 11.52	20.15	12.35					11.14	6.78	3.86 6.2	9 7.4	1 6.09	n/a	n/a n/a	n/a	n/a	n/a n	1/s 11/s	a n/a	n/a	n/a	n/a n	ı/a n	/a n/a	n/a	n/a	n/a	n/a
		88.86	66.33	34.46	48.84	62.11	48.47	39.26	56.18 69.4			55.92	39.78	5.52 11.70	20.67	12.63			.53 18.98		11.25	5.39	3.78 5.9	6 7.23	3 5.59	n/a	n/a n/a	n/a	n/a	n/a n	1/a n/s	a n/a	n/a	n/a	n/a n	ı/a n	/a n/a	n/a	n/a	n/a	n/a
	14.87	93.37	85.31	21.13	34.59	50.17	35.30	35.01	53.99 69.5	6 52.86		68.60	50.87	1.91 5.00	11.37	6.09	6.46	15.74 27			77.43	80.43	38.47 53.3	60.83	2 58.27	19.67	94.49 80.8	21.92	35.31	50.97 3	16.07 7.	.37 14.56	24.60	15.51	43.50 6	0.85	4.15 59.5	0 14.20	26.91	43.03	28.05
		95.41	75.64	26.75	41.12	56.82	41.56	36.08	54.95 70.5	2 53.98	60.40	64.41	39.42	2.89 7.71	15.63	8.74	6.73	15.55 26	.57 16.28		81.63	47.42	40.43 55.6	4 62.2	7 51.44	29.96	96.22 72.0	13 28.69	43.58	58.76 4	13.68 10.	68 19.00	30.22	19.97	44.19 6	1.48	4.70 60.1	2 14.82	27.65	43.76	28.74
	33.00	95.93	69.53	26.98	41.23	56.41	41.54	36.93	55.82 71.5	54.66	64.07	64.51	35.67	3.07 7.95	15.91	8.98	5.95	14.77 25	.53 15.43	66.01	82.25	36.30	39.74 54.2	61.20	47.88	35.55	96.62 66.6	29.19	43.97	59.11 4	14.09 10.	83 19.14	30.46	20.14	44.37 6	1.66	4.88 60.3	14.61	27.59	43.98	28.73
		93.06	34.39	13.94	25.24	40.24	26.47	23.12	40.38 58.0	0 40.50	65.97	67.98	33.09	1.62 5.41	13.12	6.72	5.43	12.96 24	.31 14.2	62.92	76.76	34.06	29.97 46.4	7 55.13	3 41.41	64.47	94.35 35.8	17.25	30.67	46.78 3	1.57 5.	.36 11.34	20.97	12.56	33.57 5	1.72 6	7.54 50.5	4 11.14	21.75	35.83	22.91
	69.64	94.31	31.20	15.50	27.03	42.09	28.21	23.82	40.67 58.4	2 40.97	75.33	64.30	25.40	2.24 6.48	13.80	7.51	4.88	12.34 23	.33 13.53	77.70	79.28	22.15	31.21 47.5	6 55.90	39.21	68.53	95.45 32.3	37 21.30	35.15	50.68 3	5.71 7.	29 14.40	24.40	15.37	34.36 5	2.52 6	8.35 51.7	4 11.23	21.95	36.37	23.18
	72.07	94.71	28.87	16.27	28.36	42.92	29.19	23.41	41.05 59.0	41.17	27.38	64.34	23.22	2.16 6.33	13.70	7.39	4.84	12.51 23	41 13.50	82.13	79.59	17.51	31.18 47.8	4 55.77	38.07	70.91	98.81 30.0	Fo 21.58	35.62	51.28 3	16.16 7.	37 14.44	24.52	15:44	34.02 5	2.22 6	8.10 51.4	0 11.09	21.75	39.18	23:01
	64.63	93.35	35.44	11.66	23.18	38.69	24.51	22.37	40.04 58.2	7 40.23	68.01	67.36	31.01	0.93 3.22	8.95	4.37	3.63	9.98 15	.43 11.00	66.67	76.40	29.59	24.03 40.7	1 50.30	36.16	65.18	94.39 35.1	10 14.69	27.40	43.16 2	8.42 4.	48 9.78	18.42	10.90	30.21 4	8.10 6	4.31 47.5	4 9.36	18.94	32.29	20.20
	68.65	94.79	32.16	14.17	25.72	40.47	26.79	22.24	40.18 58.8			64.28	24.39	1.46 4.12	9.84	5.14	3.53	9.61 15	.76 10.97	79.83	79.85	19.60	27.59 45.3	1 53.63	7 36.54	69.12	95.78 31.7	71 18.27	31.65	47.14 3	12.35 5.	.93 12.09	21.25	13.09	30.60 4	8.76 6	4.91 48.0	9.42	19.05	32.46	20.31
		95.21	29.79	14.70	26.27	40.48	26.15	21.95	39.99 58.1			61.34	22.34	1.61 4.27	9.97	5.29	4.05	10.13 15	.33 11.17	83.69	80.20	15.59	26.94 45.2	U 53.6	35.35	71.39	96.12 29.3	18.76	32.11	47.64 3	12.84 6.	21 12.40	21.58	13.40	30.61 4	8.81 6	5.14 48.1	9 9.26	18.85	32.54	203.22
		96.89	90.93	65.78	01.00		63.46	6.41	66.32 79.5			70.66	60.88	7.18 15.90	27.06	16.71	12.12	25.03	.70 25.29	13.04	77.93	82.53	38.14 53.8	61.13	58.93	13.63	95.25 87.7	70 38.29	53.49	67.36 5	3.11 15.	61 26.45	39.44	27.17	91.33	7.43	9.01 65.5	19.31	33.83	50.50	34.55
		97.24	89.35	51.67				49.76	66.87 79.8			70.76	59.67	8.52 18.15	29.77	18.82	12.34	25.44 35	.27 25.68	51.61	81.27	49.65	39.86 55.8	3 62.70	6 52.03	22.25	96.54 80.2	43.26	58.35	71.60	7.74 18.	35 29.88	43.45	30.56	52.09 6	8.11 7	9.61 66.6	20.09	34.91	51.78	35.59
		97.35						49.46	65.38 79.5			70.79	56.96	8.75 18.35	29.70	18.93	12.40	25.36 35	.16 25.6	62.53	81.93	38.09	39.92 55.5	9 62.4	49.00	28.30	98.93 74.2	32 43.38	58.52	71.66	7.85	57 29.99	43.44	30.67	52.04	8.29	9.90 66.7	19.83	34.49	51.56	35.29
		90.93		36.57	51.69		51.23	41.79	57.56 70.3			64.58		3.23 8.47	16.31	9.34	7.49	16.09 26	.71 16.78		75.70	61.70	35.31 50.1	1 57.33	3 51.11	20.11	93.69 80.2	31.99	46.62	60.56 4	16.52 11.	.92 21.62	33.90	22.48	48.19 6	3.96	62.5	8 17.87	31.72		32.51
			70.44	42.08	56.53	68.69	55.77	41.27	57.80 70.5		63.94	60.87		4.32 10.35	19.06	11.24	7.16	15.91 26	41 16.4	63.74	79.12	38.84	36.21 50.7	2 57.31	8 45.79	30.65	95.23 71.3	38.86	53.60	67.07	3.21 15.		39.27	27.23	48.21 6	4.22	6.06 62.8	3 17.84	31.56	47.89	32.43
	37.44 15.88	92.49	64.86	41.79	86.72	60.03	30.85	42.00	58.43 71.3	2 57.25	67.54	60.92	32.94	4.35 10.45	19.07	11:29	7.38	16.23 26	84 16.8	72.27	79.62	29.93	37.01 51.0	3 57.00	43.76	36.24 15.81	95.63 65.8 96.29 86.3	39.01	53.92	67.32 6	3.42 15.	.97 26.70	39.54	27.40	48.43 6	4.51 7	63.1	b 18.00	31.86	48:24	32.70
		95.63	86.88	47.29	63.00	10.28	61.86	45.35	63.11 77.0	61.82	33.48	68.44	65.40	8.46 18.82 8.00 19.24		19.55	13.20	26.73 41	.02 26.98	49.92	81.77	52.73	40.62 56.8	63.41	53.40		96.29 86.7	64.16	50.43	72.47	8.66 18.	.90 30.79 .21 31.01	44.36	31.35	93.23	0.30	0.61 67.7	8 20.84	36.01	52.91	30.58
	23.71	96.23	79.40	47.26	62.83	70.30	61.79	40.36	64.84 78.5	63.35	40.67	68.40	57.83				12.85	26.58 41	.04 26.83	61.56	52.42	40.39	41.00 56.4	3 63.65	80.52	23.19	98.74 79.0	18 44.40	34.65	72.00	8.91 19. 10.27 12		44.00	31.60	88.71	W.CD	1.11 68.1	21.02	30.23	23.35	35.87
	1.05	92.99	99.02	40.01	86.11	70.38	55.50	46.52	63.39 76.1	62.22	17.92	64.46	82.25	5.21 12.65		13.76	12.28	26.06	17 26.17	11.47	76.39	88.60	38.90 54.6	61.75	9 <b>60.98</b> 9 52.82	1.05	93.82 99.1	34.35	49.60	64.15 4			35.98	24.15	52.87 6	8.64	9.84 67.1	20.46	35.33	52.12	30.97
	16.29	95.60	86.60	46.80	62.33	74.80	61.31	45.64	63.41 77.0	62.02	41.40	66.82	60.03	8.11 17.86	29.81	18.50	12.77	28.67 35	.52 25.95	52.31	81.48	51.62	40.34 56.3	62.95	52.82	16.13	96.29 86.4	43.69	58.99	72.15	18.28	81 30.42	43.90	31.64	53.25 6	0.17	0.44 67.6	20.60	35.82	52.70	30.35
	24.12 0.52	96.18	79.11	46.88	62.62	70.04	61.51	46.90	64.64 77.5	63.18	48.15	66.90	53.00	8.65 18.41	22.78	19.12	12.32	28.60 35	52 25.8	63.85	82.14	39.38	41.48 56.5	63.71	8 50.29	23.46	96.74 79.3	43.74	59.06	72.19	8.33 18.	81 30.55	44.03	31.13	93.99	0.50	0.96 68.0	21.04	36.33	20.55	36.92
	16.00	92.98	99.88 86.82	321.54		70.23	55.14	45.79	63.19 76.8	61.94	11.29	60.28	63.12	5.11 12.24 8.44 18.47		13.38		26.06 46	26.27	9.82 51.73	76.16	88.71	38.03 54.1	61.43	3 60.58 1 53.31	15.94	93.73	33.78	49.03	53.54 4	18.81 12.	.88 23.06 .75 30.57	35.66	23.86	50.43	8.77	9.58 67.2	20.49	35.47	52.38	30.11
	23.83	90.60	79.33	47.10	62.60	74.99	01.00	40.01	63.21 76.5	62.00	44.50	66.15	65.12	3.44	39.66	19.19	12.65		01 26.4	63.24	00.11	01.07	41.07 56.9	63.7	50.00		36.50	43.87	50.00	72.01 0	0.57	30.57	44.20	31.17	03/41 6	0.40	0.00	20.91	36.08	02.:0	35.65
	0.52	30.22	19.53	41.03	33.46	14.94	01/4/	40.92	64.00 78.3	63.27	44.58	66.15	00.14	2.55 7.43	16.46	8.81	12.44	25.96 40	02 27.84		62.11	99.44	41.02 56.3	63.66	8 82.10	23.30	79.1	44.00	09.26	12/11	18.	30.65	16.69	31.24	99.10	W.71 B	1.08 68.1	5 21.16 6 21.16	36.30	20.42	-
	21.47	88.00	94.50	19.14	33.46		34.22	47.67	65.44 78.8	63.86	11.29	62.91	61.91	2.55 7.43 8.45 18.43		8.81 18.95		27.22 42 26.36 40	27.5	9.82 33.54	77.08	73.66	38.15 54.7 41.63 57.7	62.3	50.10	26 14	87.02 92.0 96.29 76.4	13.90	25.54	40.31 2	6.58 3.	97 8.73	16.69	9.80	53.50 6	0.22 8	0.57 67.7	21.16	30.25	50.00	30.86
	25.54	90.29	70.07	40.00	11.00	71.82	50.01	47.00	60.00 78.5	64.09	44.72	66.00	61.91	0.40 18.43	29.97	10.00			28 27.0		01.09	63.89	41.58 57.4		5 56.86	26.14	96.29 76.4	38.11	52.40	60.00	0.74	26.33	30.44	20.94	50.40	0.40	0.73	21.03	30.80	51.70	25.02
+MOP+NCC	1.05	90.04	10.07	10.70	20.00	12.10	00.10	10.72	64.50	62.86	17.00	65.13	00.70	2.61 7.28	15.67	8.52		27.06	.23 27.00 81 27.20		27.00	93.41			61.77	30.00	00.70 01.0	38.96	04.10	00.12 8	16.	07 8 96	39307	0.07	50.55	0.10	0.71	20.54	30.14	50.00	35.82 37.03
	22.05	00.00	81.58	10.05	52.62	40.43	20.15	10.03	64.00 78.3	63.06	17.92	62.01	50.00	2.61 7.28	29.68	0.02	10.75	00.00	07 00 4	33.84	01.00	73.71	37.92 54.4 42.41 58.0		50.00	2.05	00.79 91.0	13.56	24.50	36.91 2	1.00	8.96	20.08	9.87	50.71	0.24	0.76	21.41	GC 11	50.50	01.00
	26.22	90.09	01.08	42.10	01.47	70.01	10.00	10.00	64.94 78.6	63.49	43.30	66.70	54.00	17.97	29.68	10.01	12.10	20.20	26.4	43 10	02.00	63.53	42.41 58.0		59.69	20.43	96.21 76.1	37.71	50.71	65.00	0.33	26.35	30.08	20.94	50.54	0.42	0.74	21.87	36.11	50.07	20.00
		98.49	29.36	93.74	01.10	10.03	01.25	40.20	37.28 53.7	0 37.72	47.93	65.72	01.00	18.29	13.77	7.45	1000	10.00 00	18 11.77		82.00 77.05	27.91	31.68 49.2		07.33	20.72	04.70 70.3	38.53	02.51	40.00	16.	26.85	20.64	24.002	00.00	0.10	1.44 45.4	21.05	17.70	20.53	18 96
	74.76	90.63	26.19	21.74	30.00	50.00	30.02	22.16	97.25 53.3	4 37.72	69.15	67.82	30.91	2.41 6.17	14.50	0.07	4.21	10.02 20	00 11.77	65.87	01.00	18.23	31.08 49.2	36.95	41.45	70.10	94.70 30.1	20.39	30.66	49.00	6.	17 15.70	20.15	10.50	29,00 4	5.00 6	1.00 45.4	8.66	17.70	30.01	10.00
	76.84	90.64	26.19	22.84	20.54	02.03	07.25	21.00	37.62 56.1	4 38.15 2 38.81	71.81	66.23	07.92	0.10 7.32	14.58	7.00	4.24	10.21 15	67 11.3	81.41	01.26	14.78	20.10 48.0	0 55.05	38.12	75.52	90.10 27.1	23.54	30.80	01.00	8.	15.70	20.58	10.00	20.19 4	0.63	1.30 45.5	8.93	17.91	30.85	19.23
	0.00	77.99	99.02	19.75	26.22	42.00	27.66	22.03	16.06 60.5	2 38.81	0.00	61.52	25.96	1.01 6.88	14.21	7.50	11.12	22.74 93	97 24.2	0.00	59.44	66.95	22.41 47.9	2 56.15	37.42	0.00	27 15 91 6	23.83	20.52	24.22	1 77 2	97 6.75	19.55	7.76	27.02 5	2.10 6	6 19 59 3	9 14.25	25.66	20.91	26 (1
		89.37	60.03	07.00	20.00	53.40	20.40	20.41	47.03	40.00	10.10	67.02	59.00	0.10	00.40	10.04	10.00	00.01	02 02 0	67.48	20.22	32.28	07.01 50.0	00.1	45.75	40.00	00.70 55.6	10.00	20.00	40.70	0.01	0.70	00.00	17.70	20.07	0.10	0.10	14.20	27.00	00.01	00.70
		89.37	50.71	20.00	30.08	51.00	10.07	02.41	47.33 61.3	2 47.63	40.46	67.30	50.00	0.81 15.74	25.48	10.04	10.96	22.91 36	93 23.60 81 23.50		79.77	32.28	07.50 53.0	0 57.04	45.75	40.00	90.70 50.5	24.03	30.92	40.40	10.24 9.	16.88	26.02	17.01	30.00	0.10	0.14 50.4	0 14.85	20.80	20.71	20.10
	13.49	93.44	96.79	21.79	95 96	51.41	26.15	25.72	54.01 70.5	6 52.66	44.51	67.02	59.75	2.49 6.20	13.24	7.34	7.12	16.13 27	72 16.9		76.62	90.04	20.29 51.5	0 60.00	50.00	17.00	01.59 92.5	24.00	26.19	51.99	6 70 7	60 14.70	24.94	15.71	42.66 6	0.65	2 92 50.3	14.46	27.21	42.05	29.22
		95.38	76.85	00.04	43.50	20.00	41.77	07.10	54.07 70.0	5 53.33	20.05	67.32	40.70	0.30	10.00	0.00	7.10	15.65 06	66 16.50	53.86	00.00	48.51	39.38 54.2	00.36	50.65	27.79	96.26 74.3	22.00	40.00	50.07	10.45	14.70	20.00	10.00	40.07	1.10	1.00	14.01	07.17	40.15	00.00
	32.63	90.58	70.60	20.64	41.03	50.00	40.51	07.50	56.03 70.3	55.00	08.85	63.73	40.19	3.45 8.72	16.88	9.05	7.10	10.00 26	54 15.00	64.78	00.26	48.51 37.07	40.53 54.2	0 60.4	50.00	22.79	90.20 74.3	28.72	40.27	50.00	10.	18.73	29.80	19.60	40.07 6	1.12	4.25 50.7	0 14.51	27.17	40.10	20.25
		94.35	10.53	4.67	10.40	21.66	12.24	10.49	22.43 38.5	8 23.76	88.14	67.95	39.03	0.54 1.02	6.12	2.97	1.67	4.90 11	42 5.9		76.42	9.21	20.60 36.2	2 45.35	48.39 27.86	89.20	94.90 10.9	29.26	14.00	25.65	5.46 1	04 4.79	0.01	5.54	17.42 2	1.02 4	0.00	7 5.12	11.17	20.00	12.60
	80.44	94.73	9.85	5.00	11.00	00.70	10.00	11.05	00.07 00.0			50.54	7.10	0.04 1.00	5.56	0.00	1.00	4.00	90 58		77.00	6.01	01.07 00.2	5 45.4		90.12			15.00	20.00	7.00	50 5.71	11.00	0.04	17.40	1.00	0.00 00.0	0.12	11.00	20.00	10.44
	90.94		9.85	0.05	11.08	22.16	10.05	10.70	22.67 38.4	0 24.04		52.54	6.70	0.62 1.80	5.00	2.00	1.05	5.03			70.04	4.86	21.97 36.7	0 45.46	7 27.13	90.65	95.24 10.1 95.46 9.6		10.89	20.00	7.20 2.	10 5.71	11.08	0.44	17.40 3	1.00 4	0.00 32.6	5.06	11.33	20.53	12.63
TONINGTAINGONG	20.96	94.97	9.36	5.63	11.59	23.94	13.12	10.70	21.86 38.3	6 23.64	38.21	52.52	6.79	0.01 1.69	0.82	2.10	1.00	0.01	.48 6.0	50.17	16.04	4.86	22.40 36.3	44.8	27.13	90.00	90.40 9.0	7.85	10.55	20.20	1.30 2.	49 5.64	11:21	0.43	11.03 3	1.50 4	5.00 32.6	5.10	11.48	21.30	12.03