Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
0	rto: or m. npto:	12.6153	1.9208	iages		13.678	0.632182
1	95	12.8	1.67198		12	11.9247	0.865123
2	88	11.5961	1.8599	2		10.7662	0.8476
					+		
3	80	11.6606	1.71547	3		13.2318	1.05808
4	90	12.8584	1.72203	4		11.8924	0.978079
5		13.8577	1.79794		.	22.3854	1.1162
6	79	13.5902	1.58234	(16	13.3705	0.873825
7	85	14.9119	1.66489	7	15	12.8885	1.26628
8	86	14.2437	1.95602	3	23	12.8289	0.998539
9	82	12.5735	1.58164	9	21	15.2229	1.57381
Descriptor	BRISK			Descriptor	BRISK		
Detector	SHITOMASI			Detector	HARRIS		
Avg. no. of matched keypoints	85				16		
•				Avg. no. of matched keypoints			
Avg. detector processing time	13.1 ms			Avg. detector processing time	13.8 ms		
Avg. descriptor processing time	1.7 ms			Avg. descriptor processing time	1.0 ms		
Total Processing time	14.8 ms			Total Processing time	14.8 ms		
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
0		96.8696	1.37294	(i e	1.05255	2.65689
1	64	70.9316	1.31634		+	0.996916	2.02336
2		71.5396	1.24276	2		0.779125	1.6058
3		70.3936	1.42076	3		0.931433	1.64785
4	66	72.6445	1.32037	4	ļ	0.938912	1.57574
5	59	76.1403	1.73461	5	85	0.944519	1.601
6	64	71.8265	1.30553	6	107	0.914633	1.50504
7	64	73.9046	1.40429	7		1.13238	1.5057
8		75.8402	1.49237	8	.	0.95965	1.81146
9	80	72.6385	1.58168	9		0.840733	1.44523
	-	72.0303	1.36100		·	0.040733	1.44525
Descriptor	BRISK			Descriptor	BRISK		
Detector	SIFT			Detector	FAST		
Avg. no. of matched keypoints	66			Avg. no. of matched keypoints	100		
Avg. detector processing time	75.3 ms			Avg. detector processing time	0.9 ms		
Avg. descriptor processing time	1.4 ms			Avg. descriptor processing time	1.7 ms		
Total Processing time	76.7 ms			Total Processing time	2.7 ms		
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
0		62.4441	3.0282				1.60442
U				() [9.38065	
1	171	61.2567	2.84061	1	73	8.39287	1.42061
1 2	171			2	73	8.39287 6.91922	
•	171 176	61.2567	2.84061		73		1.42061
2	171 176	61.2567 61.2271	2.84061 2.6214	2	73 2 74 3 79	6.91922	1.42061 1.18802
2	171 176 157 176	61.2567 61.2271 59.941	2.84061 2.6214 2.9583	2	73 74 79 8 79	6.91922 7.91725	1.42061 1.18802 1.95174
2 3	171 176 157 176 174	61.2567 61.2271 59.941 63.8209 62.1244	2.84061 2.6214 2.9583 3.02758 2.96607	3	73 2 74 3 79 4 85 5 79	6.91922 7.91725 8.04115 6.78822	1.42061 1.18802 1.95174 1.442 1.4907
2 3 3 4 5 6	171 176 157 176 176 174	61.2567 61.2271 59.941 63.8209 62.1244 62.2025	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429	2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	73 74 79 85 6 79 6 92	6.91922 7.91725 8.04115 6.78822 6.97736	1.42061 1.18802 1.95174 1.442 1.4907 1.35182
3 3 4 5 6	171 176 157 176 174 188 173	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581	2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	73 74 79 85 79 92	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775
2 3 4 5 6 7 8	171 176 157 176 174 188 173	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	73 74 79 85 79 92 90 88	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 5 6 7 7 8	171 176 157 176 174 188 173 171	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581	\$ 5 5 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	73 74 79 85 79 90 90 88 91	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775
2 3 3 4 4 5 5 6 6 7 7 8 8 9 Descriptor	171 176 157 176 174 188 173 171 184 BRISK	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	73 74 79 85 79 92 90 888 91 BRISK	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector	171 176 157 176 174 188 173 171 184 BRISK BRISK	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	2 2 3 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	73 74 79 85 79 92 90 888 91 BRISK ORB	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints	171 176 157 176 174 188 173 171 184 BRISK	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	73 74 79 85 79 92 90 888 91 BRISK	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector	171 176 157 176 174 188 173 171 184 BRISK BRISK	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	2 2 3 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	73 74 79 85 79 92 90 888 91 BRISK ORB	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints	171 176 157 176 174 188 173 171 184 BRISK BRISK	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	2 2 3 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	73 74 79 85 79 92 90 88 88 91 BRISK ORB	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 55 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	171 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	171 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	171 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	171 176 157 176 174 188 173 171 184 BRISK BRISK 61.7 ms 2.8 ms 64.4 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images	171 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0	171 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Inages 0 1	171 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0	171 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Inages 0 1	171 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2	171 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts.	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2 3	171 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts.	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2 3 4 5	171 176 176 157 176 174 188 173 171 184 BRISK BRISK 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	171 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7	171 176 176 177 176 177 178 188 173 171 188 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 142	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7943 60.7558	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8	171 176 177 176 177 176 177 178 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 142 146	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7	171 176 177 176 177 176 177 178 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 142 146 144	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7943 60.7558	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8	171 176 177 176 177 176 177 178 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 142 146	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9	171 176 177 176 177 176 177 178 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 142 146 144	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor	171 176 177 176 177 176 177 178 188 173 171 184 BRISK BRISK BRISK 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 142 1446 BRISK	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	171 176 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 144 BRISK 144 BRISK AKAZE	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	171 176 176 157 176 174 188 173 171 184 BRISK BRISK 174 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 144 BRISK 144 BRISK AKAZE 135 61.6 ms	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304
2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	171 176 176 177 176 177 176 174 188 173 171 184 BRISK BRISK 61.7 ms 2.8 ms 64.4 ms No. of m. kpts. 137 125 129 129 131 132 144 BRISK 144 BRISK AKAZE	61.2567 61.2271 59.941 63.8209 62.1244 62.2025 60.6973 61.5095 61.4646 Detector P.T. (ms) 68.7885 62.223 60.8541 56.9624 60.9659 58.4095 60.7558 64.2173	2.84061 2.6214 2.9583 3.02758 2.96607 2.69429 2.46581 2.6058 2.56228 Descriptor P.T (ms) 1.62195 1.4986 1.54668 1.6778 1.83839 1.60979 1.8409 1.99295 2.0191	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	73 74 79 85 79 92 90 88 91 BRISK ORB 83 7.6 ms 1.5 ms	6.91922 7.91725 8.04115 6.78822 6.97736 6.7647 7.66051 7.12374	1.42061 1.18802 1.95174 1.442 1.4907 1.35182 1.41775 1.34304

Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts	Detector P.T. (ms)	Descriptor P.T (ms)
0		13.3779	0.978221		0	12.2906	0.176095
1	115	12.5359	0.942629			4 10.9755	0.773874
2	111	11.0867	0.97732			1 10.5988	0.808088
3		11.0512	1.28269			5 11.6535	0.717047
4		11.7229	1.38724			0 12.0116	0.808045
5		11.9222	0.93392			4 20.1025	1.24001
6	102	12.9986	0.956938		6 2	6 10.7849	0.6851
7	100	14.725	0.949026		7 1	6 15.0027	0.797962
8	109	12.3814	1.06449		8 2	4 11.4478	0.908185
9		12.3879	0.912011			3 16.9462	0.780208
Descriptor	BRIEF			Descriptor	BRIEF	1	
· ·	SHITOMASI	l			HARRIS	-	
Detector				Detector			
Avg. no. of matched keypoints	105			Avg. no. of matched keypoints		9	
Avg. detector processing time	12.4 ms			Avg. detector processing time		_	
Avg. descriptor processing time	1.0 ms			Avg. descriptor processing time	ne 0.8 m	s	
Total Processing time	13.5 ms			Total Processing time	14.0 m	s	
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts	. Detector P.T. (ms)	Descriptor P.T (ms)
0		96.1104	0.48387		0	1.28321	1.18273
1	86	68.3905	0.492198		1 11		1.25294
2		68.0324	0.63344		2 13		0.945223
3		85.5138	0.471873		3 11		0.711699
4		77.429	0.597289		4 12		0.854656
5	69	71.3784	0.546554		5 10	8 0.941536	0.508102
6	74	81.2137	0.494364		6 12	3 0.94058	0.512229
7		72.1088	0.601012		7 13		0.540563
8		69.4657	0.489618		8 12		0.73862
9		67.1901	0.470905		9 11	9 0.914157	0.59192
Descriptor	BRIEF			Descriptor	BRIEF		
Detector	SIFT			Detector	FAST		
Avg. no. of matched keypoints	78			Avg. no. of matched keypoints	3 12	2	
Avg. detector processing time	75.7 ms	İ		Avg. detector processing time	1.0 m	s	
Avg. descriptor processing time	0.5 ms	1		Avg. descriptor processing time		s	
Total Processing time	76.2 ms			Total Processing time	1.7 m		
Total i Toccssing time	70.2 1113			Total Troccooning time	1.7 11	9	
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Imagas	No. of m. kpts	Dotostor B.T. (ms)	Descriptor P.T (ms)
				Images			
0		65.6582	1.32903		0	8.55666	0.830601
1		60.0644			1 4	9 8.1059	0.409867
	178	60.9644	0.779234				0.403007
2		59.1918	0.779234			3 7.73582	0.306742
2 3	205				2 4		
	205 185	59.1918 59.2484	0.779312 0.946595	:	2 4	3 7.73582 5 7.6401	0.306742 0.520739
3 4	205 185 179	59.1918 59.2484 59.8342	0.779312 0.946595 0.924624		2 4 3 4 4 5	3 7.73582 5 7.6401 9 6.71751	0.306742 0.520739 0.331625
3 4 5	205 185 179 183	59.1918 59.2484 59.8342 59.4722	0.779312 0.946595 0.924624 0.744443		2 4 3 4 5 5	3 7.73582 5 7.6401 9 6.71751 3 8.50452	0.306742 0.520739 0.331625 0.593908
3 4 5 6	205 185 179 183 195	59.1918 59.2484 59.8342 59.4722 59.8233	0.779312 0.946595 0.924624 0.744443 0.80902		2 4 3 4 4 5 5 5 6 7	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504	0.306742 0.520739 0.331625 0.593908 0.364628
3 4 5 6 7	205 185 179 183 195 207	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927		2 4 3 4 5 5 6 7	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721
3 4 5 6 7 8	205 185 179 183 195 207	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043		2 4 3 4 5 5 6 7 7 6 8 8	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7	205 185 179 183 195 207	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927		2 4 3 4 4 5 5 5 6 7 7 6 8 8	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721
3 4 5 6 7 8	205 185 179 183 195 207	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043		2 4 3 4 5 5 6 7 7 6 8 8	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9	205 185 179 183 195 207 189 183	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor	2 4 3 4 4 5 5 5 6 7 7 6 8 8	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector	205 185 179 183 195 207 189 183 BRIEF BRISK	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor Detector	2 4 4 5 5 5 6 7 7 6 8 8 8 9 BRIEF ORB	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints	205 185 179 183 195 207 189 183 BRIEF BRISK	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor Detector Avg. no. of matched keypoints	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 BRIEF ORB	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 BRIEF ORB 7.5 m	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 BRIEF ORB 7.5 m	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 180 60.1 ms 1.0 ms 61.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images Images	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2 3	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847 0.62336	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2 3 4 5	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847 0.62336 0.571977	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847 0.62336	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2 3 4 5	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts.	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847 0.62336 0.571977	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 61.1 ms 61.1 ms 1.0 ms 61.1 ms 1.0 ms 61.1 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847 0.62336 0.571977 0.678551	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 61.1 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 1 2 3 4 5 6 7 8 9	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.515596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148 152 BRIEF	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 1 2 3 4 5 6 7 7 8 8 9 Descriptor Detector	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148 152 BRIEF AKAZE	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Detector Avg. no. of matched keypoints	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 61.1 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148 152 BRIEF AKAZE	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINES ORB 5 6 7.5 mile 0.5 mile 0.	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 1 2 3 4 5 6 7 7 8 8 9 Descriptor Detector	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 1.0 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148 152 BRIEF AKAZE	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINE ORB 5 6 7.5 mile 0.5	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Detector Avg. no. of matched keypoints	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 61.1 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148 152 BRIEF AKAZE	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINE ORB 5 6 7.5 mile 0.5	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468
3 4 4 5 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	205 185 179 183 195 207 189 183 BRIEF BRISK 189 60.1 ms 61.1 ms 61.1 ms No. of m. kpts. 141 134 131 130 134 146 150 148 152 BRIEF BRISK 189 60.3 ms	59.1918 59.2484 59.8342 59.4722 59.8233 58.8538 59.3095 58.9624 Detector P.T. (ms) 75.7223 54.3221 56.0178 57.7223 61.8495 60.4555 55.1744 60.8346 64.9238	0.779312 0.946595 0.924624 0.744443 0.80902 1.37927 1.13043 0.814418 Descriptor P.T (ms) 0.557097 0.516596 0.562727 0.585847 0.62336 0.571977 0.678551 1.19006 0.622895	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	2 4 4 5 5 6 7 7 6 8 8 8 8 9 6 9 FINE ORB 5 6 7.5 mile 0.5	3 7.73582 5 7.6401 9 6.71751 3 8.50452 8 7.00504 8 7.1463 4 7.04252 6 6.97602	0.306742 0.520739 0.331625 0.593908 0.364628 0.812721 0.411468

Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
0		13.5597	2.48155	C		12.6007	2.23331
1	104	12.7036	2.5108	1		11.5551	2.32726
2		12.7315	2.80115	2		13.1068	2.35922
3	100	12.6575	2.4816	3	16	11.2817	2.33139
4	102	14.1897	2.44561	4	. 18	12.7762	2.35312
5	103	13.8403	2.45501	5	24	21.0361	2.45605
6		13.8912	2.48766	6	+	12.0316	2.97036
7	98	13.159	2.49266	7	<u> </u>	12.9245	2.35329
8	102	13.2543	2.49246	8	24	14.822	2.43133
9	97	13.1741	2.52984	g	20	15.9481	2.44323
Descriptor	ORB			Descriptor	ORB		
Detector	SHITOMASI			Detector	HARRIS		
Avg. no. of matched keypoints	101			Avg. no. of matched keypoints	18		
Avg. detector processing time	13.3 ms			Avg. detector processing time	13.8 ms		
Avg. descriptor processing time	2.5 ms			Avg. descriptor processing time	2.4 ms		
Total Processing time	15.8 ms			Total Processing time	16.2 ms		
				3			
Images	No of m lints	Dotostor D.T. (m-)	Descriptor D.T. (re-)	Imagas	No of m lint-	Dotostor D.T. (n==)	Descriptor D.T. (r)
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.		Descriptor P.T (ms)
0				C		0.989142	2.61152
1				1	122	1.01931	2.52834
2				2	122	0.961502	2.42246
3	t			3		0.995603	2.37021
	 						
4				4		0.98251	2.83437
5				5	107	1.10034	2.70422
6				6	120	0.953679	2.41608
7	<u> </u>			7		1.21463	2.37606
	+						
8				8		1.17217	2.40498
9				g	118	0.944325	2.37302
Descriptor	ORB			Descriptor	ORB		
Detector	SIFT			Detector	FAST		
Avg. no. of matched keypoints	#DIV/0!			Avg. no. of matched keypoints	120		
Avg. detector processing time	#DIV/0!			Avg. detector processing time	1.0 ms		
Avg. descriptor processing time	#DIV/0!			Avg. descriptor processing time	2.5 ms		
Total Processing time	#DIV/0!			Total Processing time	3.5 ms		
Imagas	No of m knts	Detector D.T. (ma)	Descriptor D.T. (ma)	Images	No of m knts	Detector D.T. (ma)	Descriptor D.T. (ma)
Images	No. of m. kpts.		Descriptor P.T (ms)	Images	No. of m. kpts.		Descriptor P.T (ms)
Images 0		Detector P.T. (ms) 60.9661	Descriptor P.T (ms) 10.9102	Images		Detector P.T. (ms) 7.43544	Descriptor P.T (ms) 9.8351
-							
0	160	60.9661	10.9102	C 1	65	7.43544	9.8351
0 1 2	160 171	60.9661 62.0765 61.1051	10.9102 9.64833 9.54465	1 2	65 69	7.43544 6.70306 7.50304	9.8351 9.6099 9.27838
0 1 2 3	160 171 157	60.9661 62.0765 61.1051 59.2647	10.9102 9.64833 9.54465 10.2311	2	65 69 71	7.43544 6.70306 7.50304 7.68523	9.8351 9.6099 9.27838 9.83372
0 1 2 3 4	160 171 157 170	60.9661 62.0765 61.1051 59.2647 62.4546	10.9102 9.64833 9.54465 10.2311 9.81622	2 3 4	65 69 71 85	7.43544 6.70306 7.50304 7.68523 6.84912	9.8351 9.6099 9.27838 9.83372 10.1914
0 1 2 3 4 5	160 171 157 170 154	60.9661 62.0765 61.1051 59.2647 62.4546 61.08	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764	3 3 4 5	65 69 71 85	7.43544 6.70306 7.50304 7.68523	9.8351 9.6099 9.27838 9.83372 10.1914 9.48564
0 1 2 3 4	160 171 157 170 154	60.9661 62.0765 61.1051 59.2647 62.4546	10.9102 9.64833 9.54465 10.2311 9.81622	2 3 4	65 69 71 85	7.43544 6.70306 7.50304 7.68523 6.84912	9.8351 9.6099 9.27838 9.83372 10.1914
0 1 2 3 4 5 6	160 171 157 170 154 180	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637	3 3 4 5	65 69 71 85 91	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653	9.8351 9.6099 9.27838 9.83372 10.1914 9.48564 9.68367
0 1 2 3 4 5 6	160 171 157 170 154 180	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10,9102 9,64833 9,54465 10,2311 9,81622 8,72764 9,59637 9,1019	3 3 4 5 6	65 69 71 85 91 101	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156	9.8351 9.6099 9.27838 9.83372 10.1914 9.48564 9.68367 10.0564
0 1 2 3 4 5 6 7	160 171 157 170 154 180 171 175	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	C C C C C C C C C C C C C C C C C C C	65 69 71 85 91 101 95	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8	160 171 157 170 154 180 171 175	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10,9102 9,64833 9,54465 10,2311 9,81622 8,72764 9,59637 9,1019	C C C C C C C C C C C C C C C C C C C	65 69 71 85 91 101 95 93	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7	160 171 157 170 154 180 171 175	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	C C C C C C C C C C C C C C C C C C C	65 69 71 85 91 101 95	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8	160 171 157 170 154 180 171 175	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	C C C C C C C C C C C C C C C C C C C	65 69 71 85 91 101 95 93	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 9 Descriptor Detector	160 171 157 170 154 180 171 175 172 ORB	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	C C C C C C C C C C	65 69 71 85 91 101 95 93 91 ORB	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	160 171 157 170 154 180 171 175 172 ORB BRISK	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints	65 69 71 85 91 101 95 93 91 ORB	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	160 171 157 170 154 180 171 175 172 ORB BRISK	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	65 69 71 85 91 101 95 93 91 ORB ORB	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	160 171 157 170 154 180 171 175 172 ORB BRISK	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	65 69 71 85 91 101 95 93 91 ORB ORB	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.48564 9.68367 10.0564 10.5524
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Inages	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Inages	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 68.7305	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 68.7305	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts.	60.9661 62.0765 61.1051 59.2647 62.4546 61.03 61.845 59.0155 59.855 68.7305	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts.	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 5 6 7 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts.	60.9661 62.0765 61.1051 59.2647 62.4546 61.03 61.845 59.0155 59.855 68.7305	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6095 9.27836 9.83372 10.1914 9.48564 9.68367 10.0564
0 1 2 3 3 4 5 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 4	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts.	60.9661 62.0765 61.1051 59.2647 62.4546 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts.	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005 6.74482	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 132 133	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6095 9.27836 9.83372 10.1914 9.48564 9.68367 10.0564
0 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 132 133	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005 6.74482	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6095 9.27836 9.83372 10.1914 9.48564 9.68367 10.0564
0 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Total Processing time Images 0 1 2 3 4 5 6 7 8	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 132 137	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6095 9.27836 9.83372 10.1914 9.48564 9.68367 10.0564
0 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 4 5 6 7 7 8 9 9	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 137 137	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005 6.74482 6.95334	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 7 8 9 Descriptor processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 132 137 137 146 ORB	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 7.16374 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 7 8 9 Descriptor Detector	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 137 137 137 146 ORB AKAZE	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 7 8 9 Descriptor processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 132 137 137 146 ORB	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Total Processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 137 137 137 146 ORB AKAZE	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor processing time Output Detector Avg. descriptor processing time 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 137 146 ORB AKAZE 132 62.4 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.88367 10.0564 10.5524
0 1 1 2 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 137 137 146 ORB AKAZE 132 62.4 ms 6.6 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.48564 9.68367 10.0564
0 1 2 3 3 4 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor processing time Detector processing time Output Detector processing time Output Descriptor processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	160 171 157 170 154 180 171 175 172 ORB BRISK 168 61.6 ms 9.9 ms 71.5 ms No. of m. kpts. 130 129 128 115 132 137 146 ORB AKAZE 132 62.4 ms	60.9661 62.0765 61.1051 59.2647 62.4546 61.08 61.8458 59.0155 59.885 68.7305 Detector P.T. (ms) 66.061 56.2185 55.9346 56.9772 59.9884 63.7758 62.6139 62.4994 74.1924	10.9102 9.64833 9.54465 10.2311 9.81622 8.72764 9.59637 9.1019 11.3865 9.92108 Descriptor P.T (ms) 6.41344 6.44515 6.20956 6.37785 6.47005 6.74482 6.95334 6.61738	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	65 69 71 85 91 101 95 93 91 ORB ORB 85 7.5 ms	7.43544 6.70306 7.50304 7.68523 6.84912 7.36065 7.64653 8.5156 7.37017	9.8351 9.6099 9.27838 9.83372 10.1914 9.48564 9.68367 10.0564 10.5524

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Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. l	kpts.		Descriptor P.T (ms)
0		12.9362	24.2606	1	0		12.4095	23.3298
1	90	9.79428	21.5685		1	13	12.4942	21.6646
2	88	11.1909	21.6115		2	13	8.21289	21.1021
3		8.98186	22.1958		3	15	8.11169	21.8488
-								
4		9.81853	21.9865		4	15	8.77611	21.5869
5	83	9.71779	22.3877		5	17	18.42	21.8601
6	78	7.87641	22.6161		6	20	9.81679	21.5566
7	81	7.59477	21.994		7	14	10.2265	20.8567
8		10.2595	22.5224		8	21	9.65635	20.9423
								
9	84	8.16466	22.5589	!	9	18	12.1559	21.6724
Descriptor	FREAK			Descriptor	FREAK			
Detector	SHITOMASI			Detector	HARRIS			
Avg. no. of matched keypoints	85			Avg. no. of matched keypoints		16		
	<u> </u>							
Avg. detector processing time	9.6 ms			Avg. detector processing time		.0 ms		
Avg. descriptor processing time	22.4 ms			Avg. descriptor processing time	ne 21.	.6 ms		
Total Processing time	32.0 ms			Total Processing time	32.	.7 ms		
Imagaa	No of re-limb	Detector D.T. (= :)	Descriptor D.T.(***)	Imagaa	No ef e	lent-	Detector D.T. (***)	Descriptor D.T.()
Images	No. of m. kpts.		Descriptor P.T (ms)	Images	No. of m. I	ĸpts.		Descriptor P.T (ms)
0		95.7047	21.393		0		1.50547	24.5694
1	64	70.6243	21.6378		1	97	1.03866	24.3766
2		67.7277	21.3642		2	98	0.855218	22.1852
3		71.4629	21.319		3	94	0.91109	21.6438
4	66	72.5776	21.628		4	99	0.797822	21.9151
5	63	70.067	21.5912		5	88	0.924934	22.5956
6		74.5047	21.8562		6	99	0.842598	21.7229
7	64	71.3682	22.1356		7	104	0.96259	21.7575
								
8		70.476	21.5781		8	99	0.729476	21.7236
9	79	71.542	22.2446		9	103	0.91414	22.3991
Descriptor	FREAK			Descriptor	FREAK			
Detector	SIFT			Detector	FAST			
						98		
Avg. no. of matched keypoints	66			Avg. no. of matched keypoints				
Avg. detector processing time	73.6 ms			Avg. detector processing time	0.	.9 ms		
Avg. descriptor processing time	21.7 ms			Avg. descriptor processing time	ne 22.	.5 ms		
Total Processing time	95.3 ms			Total Processing time	23.	.4 ms		
Total Total State of Table 1								
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. I	kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0	No. of m. kpts.				No. of m. I	kpts.		
0		61.3893	24.9687		0		9.37171	25.3176
0	160	61.3893 61.2124	24.9687 24.2882		0	42	9.37171 9.17751	25.3176 24.2973
0 1 2	160 178	61.3893 61.2124 59.5382	24.9687 24.2882 22.5515		0 1 2	42 36	9.37171 9.17751 7.07184	25.3176 24.2973 22.3229
0	160 178	61.3893 61.2124	24.9687 24.2882		0	42	9.37171 9.17751	25.3176 24.2973
0 1 2	160 178	61.3893 61.2124 59.5382	24.9687 24.2882 22.5515		0 1 2	42 36	9.37171 9.17751 7.07184	25.3176 24.2973 22.3229
0 1 2 2 3 4	160 178 156 173	61.3893 61.2124 59.5382 59.6376 61.1105	24.9687 24.2882 22.5515 22.2296 22.911		0 1 2 3 4	42 36 45 47	9.37171 9.17751 7.07184 7.73978 7.84453	25.3176 24.2973 22.3229 21.5939 21.7238
0 1 2 2 3 3 4 5	160 178 156 173 160	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879	24.9687 24.2882 22.5515 22.2296 22.911 23.0413		0 1 2 3 4 5	42 36 45 47 44	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952
0 1 2 3 3 4 5 6	160 178 156 173 160 183	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481		0 1 2 3 4 5 6	42 36 45 47 44 51	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097
0 1 2 3 3 4 5 5	160 178 156 173 160 183 169	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379		0 1 2 3 4 5 6	42 36 45 47 44 51 52	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916
0 1 2 3 3 4 5 6	160 178 156 173 160 183	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481		0 1 2 3 4 5 6	42 36 45 47 44 51	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097
0 1 2 3 3 4 5 5	160 178 156 173 160 183 169	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379		0 1 2 3 4 5 6	42 36 45 47 44 51 52	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916
0 1 2 3 4 5 6 7 7 8	160 178 156 173 160 183 169 179	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93		0 1 2 3 4 5 6 7 8 9	42 36 45 47 44 51 52 49	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 4 5 6 6 7 8 9 Descriptor	160 178 156 173 160 183 169 179 168 FREAK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor	0	42 36 45 47 44 51 52 49	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 11 22 33 44 55 66 77 88 9 Descriptor Detector	160 178 156 173 160 183 169 179 168 FREAK BRISK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector	0	42 36 45 47 44 51 52 49 55	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 11 22 33 4 55 66 77 8 9 Descriptor Detector Avg. no. of matched keypoints	160 178 156 173 160 183 169 179 168 FREAK BRISK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector Avg. no. of matched keypoints	0	42 36 45 47 44 51 52 49 55	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 11 22 33 44 55 66 77 88 9 Descriptor Detector	160 178 156 173 160 183 169 179 168 FREAK BRISK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector	0	42 36 45 47 44 51 52 49 55	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 11 22 33 4 55 66 77 8 9 Descriptor Detector Avg. no. of matched keypoints	160 178 156 173 160 183 169 179 168 FREAK BRISK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector Avg. no. of matched keypoints	0	42 36 45 47 44 51 52 49 55	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	0	42 36 45 47 44 51 52 49 55	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 11 22 33 44 55 66 77 88 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7199 21.488	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7199 21.488	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 4 6 7 8 8 9 9 1 8 1 8	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 55.4297	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7199 21.488 21.775 21.8802	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Total Processing time Images 0 1 2 3 4 5 5	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 55.4297 57.8338 60.9214	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.4884 21.775 21.8802 22.5499	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 56.4297 57.8338 60.9214	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7199 21.4884 21.775 21.8802 22.5499 22.3479	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Total Processing time Images 0 1 2 3 4 5 5	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts.	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 55.4297 57.8338 60.9214	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.4884 21.775 21.8802 22.5499	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 128 121 123 132	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 56.4297 57.8338 60.9214	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7199 21.4884 21.775 21.8802 22.5499 22.3479	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 1 2 3 4 5 6 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 4 5 6 7 8	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 1 2 3 4 5 6 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7199 21.4884 21.775 21.8802 22.5499 22.3479 21.7635	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK AKAZE	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK AKAZE	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK AKAZE 132 58.6 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Total Processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time 7 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK AKAZE 132 58.6 ms 21.9 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487
0	160 178 156 173 160 183 169 179 168 FREAK BRISK 170 62.1 ms 23.1 ms 85.2 ms No. of m. kpts. 126 128 128 121 123 132 145 148 137 FREAK AKAZE 132 58.6 ms	61.3893 61.2124 59.5382 59.6376 61.1105 60.2879 64.2998 62.649 62.9397 67.4837 Detector P.T. (ms) 66.481 54.0439 55.4975 57.8338 60.9214 56.9979 55.7139	24.9687 24.2882 22.5515 22.2296 22.911 23.0413 22.2481 22.3379 23.93 22.9226 Descriptor P.T (ms) 21.4884 21.7719 21.488 21.775 21.8802 22.5499 22.3479 21.7635 21.8028	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	0	422 36 45 47 44 51 52 49 55 47 8 ms	9.37171 9.17751 7.07184 7.73978 7.84453 7.26446 6.96547 7.88482 7.89242	25.3176 24.2973 22.3229 21.5939 21.7238 21.6952 22.0097 21.6916 21.4487

	In						
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
0				0			
1				1			
2	1			2			
	1						
3				3			
4				4			
5				5			
6				6			
7	1			7			
8				8			
	 						
9				9			
Descriptor	AKAZE			Descriptor	AKAZE		
Detector	SHITOMASI	Ì		Detector	HARRIS		
Avg. no. of matched keypoints	#DIV/0!	1		Avg. no. of matched keypoints	#DIV/0!		
Avg. detector processing time	#DIV/0!			Avg. detector processing time	#DIV/0!		
Avg. descriptor processing time	#DIV/0!			Avg. descriptor processing time	#DIV/0!		
Total Processing time	#DIV/0!	1		Total Processing time	#DIV/0!		
Total i Tocessing time	#51770:			Total i Tocessing time	#510/0:		
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P T (me)	Descriptor P.T (ms)
		23(00(0) 1 . 1 . (1115)	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		. 10. 01 III. Kpts.	20100101 1 .1. (1118)	2 300 i ptol 1 . 1 (1115)
0				0			
1	1			1	<u> </u>	<u> </u>	l
2				2			
3	+			3			
4	1			4	<u> </u>	l	
5	1			5			
	+						
6				6			
7	1	I		7			
8				8			
	+			9			
9				9			
Descriptor	AKAZE			Descriptor	AKAZE		
Detector	SIFT	Ì		Detector	FAST		
		1			#DIV/0!		
Avg. no. of matched keypoints	#DIV/0!			Avg. no. of matched keypoints			
Avg. detector processing time	#DIV/0!			Avg. detector processing time	#DIV/0!		
Avg. descriptor processing time	#DIV/0!	1		Avg. descriptor processing time	#DIV/0!		
Total Processing time	#DIV/0!	1			#DIV/0!		
Total Processing time	#DIV/U!				#DIV/0!		
		l		Total Processing time			
				Total Processing time			
				Total Processing time			
	No of m knts	Detector P.T. (ms)	Descriptor P.T (ms)			Detector P.T. (ms)	Descriptor P.T. (ms)
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
		Detector P.T. (ms)	Descriptor P.T (ms)			Detector P.T. (ms)	Descriptor P.T (ms)
Images		Detector P.T. (ms)	Descriptor P.T (ms)	Images		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0		Detector P.T. (ms)	Descriptor P.T (ms)
Images		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 1 2 2		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0		Detector P.T. (ms)	Descriptor P.T (ms)
Images		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 1 2 2		Detector P.T. (ms)	Descriptor P.T (ms)
Images		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 1 2 2 3 3 4		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 2 3 3 4 4 5 5		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 1 2 2 3 3 4 4 5 5		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 2 3 3 4 5 5 6 6		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 2 3 3 4 4 5 5 6		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 2 3 3 4 4 5 5		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 1 2 2 3 3 4 4 5 5		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 5 6 6 7 7		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 2 3 3 4 4 5 5 6 6 7		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 2 3 3 4 4 5 5 6 6 7 7 8		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 2 3 3 4 5 5 6 6 7 7 8		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 5 6 6 7 7		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 2 3 3 4 4 5 5 6 6 7	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 5 6 7 8		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 2 3 3 4 5 5 6 6 7 7 8		Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 4 5 5 6 6 7 7 8 8 9		Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
Images	AKAZE BRISK	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 11 2 3 4 5 6 7 8 9 Descriptor Detector	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
Images	AKAZE BRISK #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 11 22 33 44 55 66 77 89 Descriptor Detector Avg. no. of matched keypoints	No. of m. kpts. AKAZE ORB #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	AKAZE BRISK #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 11 2 3 4 5 6 7 8 9 Descriptor Detector	No. of m. kpts. AKAZE ORB #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images	AKAZE BRISK #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 11 22 33 44 55 66 77 89 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	No. of m. kpts. AKAZE ORB #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	AKAZE BRISK #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 11 22 33 44 55 66 77 89 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	No. of m. kpts. AKAZE ORB #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0!			Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 4 55 66 77 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 11 22 33 44 55 66 77 88 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images Images	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! #DIV/0!	Detector P.T. (ms) 68.5708	Descriptor P.T (ms)	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 4 55 66 77 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 11 22 33 44 55 66 77 88 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts.	Detector P.T. (ms) 68.5708 54.9879	Descriptor P.T (ms) 44.2888 51.5367	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts.	Detector P.T. (ms) 68.5708 54.9879 62.5989	Descriptor P.T (ms) 44.2888 51.5367 48.0657	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977	Descriptor P.T (ms) 44.288 51.5367 48.0657 49.5828	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138	Detector P.T. (ms) 68.5708 54.9879 62.5989	Descriptor P.T (ms) 44.2888 51.5367 48.0657	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0 1 2 3	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977	Descriptor P.T (ms) 44.288 51.5367 48.0657 49.5828	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 1 2 3 4 5 5	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704	Descriptor P.T (ms) 44.288 51.5367 48.0657 49.5528 48.4683 53.6723	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 4 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Total Processing time Images 0 1 2 3 4 5 6	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612	Descriptor P.T (ms) 44.2888 51.5367 49.0528 48.4683 53.6723 52.9503	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 1 2 3 4 5 5	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704	Descriptor P.T (ms) 44.288 51.5367 48.0657 49.5528 48.4683 53.6723	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 11 22 33 44 55 66 77 88 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 4 5 6 7	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 138 133 127 129 146 147	Detector P.T. (ms) 68.5708 54.9679 62.5989 60.977 62.7026 59.1704 62.612 62.967	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129 146 147	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129 146 147 151	Detector P.T. (ms) 68.5708 54.9679 62.5989 60.977 62.7026 59.1704 62.612 62.967	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129 146 147	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 133 127 129 146 147 151 150 AKAZE	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 7 8 9 Descriptor Detector	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 138 139 127 129 146 147 151 150 AKAZE AKAZE	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Detector Avg. no. of matched keypoints Avg. descriptor processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 133 127 129 146 147 151 150 AKAZE AKAZE	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7 7 8 8 9 Descriptor processing time Otal Processing time 1 2 3 4 5 6 7 7 8 9 Descriptor Detector	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 138 139 127 129 146 147 151 150 AKAZE AKAZE	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 7 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 138 133 127 129 146 147 151 150 AKAZE AKAZE 140 62.0 ms	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0 1 2 3 3 4 5 6 77 8 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time 0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	AKAZE BRISK #DIV/0! #DIV/0! #DIV/0! No. of m. kpts. 138 133 127 129 146 147 151 150 AKAZE AKAZE	Detector P.T. (ms) 68.5708 54.9879 62.5989 60.977 62.7026 59.1704 62.612 62.967 61.1211	Descriptor P.T (ms) 44.2888 51.5367 48.0657 49.5828 48.4683 53.6723 52.9503 56.7626 52.9609	Images 0 1 2 3 4 5 6 7 8 Descriptor Detector Avg. no. of matched keypoints Avg. descriptor processing time Avg. descriptor processing time	No. of m. kpts. AKAZE ORB #DIV/0! #DIV/0!	Detector P.T. (ms)	Descriptor P.T (ms)

				1.	1	1	
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.		Descriptor P.T (ms)
0		15.4321	14.291	()	15.2075	15.3037
1	112	11.7152	19.4548		1 14	13.8171	17.219
2	109	15.7477	17.1337	:	2 11	12.6684	15.1147
3		14.5615	14.2775				14.2392
-							
4		14.259	14.8985	4			14.3114
5	99	12.3273	15.7954		5 22	21.296	14.9617
6	101	12.6901	14.4888		3 22	11.2495	15.5002
7	96	15.5528	16.0351		7 13	12.7375	15.9197
8		11.9681	14.7392				15.8942
							-
9	97	14.6575	15.2154		9 22	16.0421	14.485
Descriptor	SIFT			Descriptor	SIFT		
Detector	SHITOMASI	1		Detector	HARRIS	1	
Avg. no. of matched keypoints	103	İ		Avg. no. of matched keypoints	18	1	
	<u> </u>				13.9 ms		
Avg. detector processing time	13.9 ms			Avg. detector processing time		_	
Avg. descriptor processing time	15.6 ms			Avg. descriptor processing time	15.3 ms	5	
Total Processing time	29.5 ms			Total Processing time	29.2 ms	5	
Imagos	No of m limits	Dotooter D.T. ()	Descriptor D.T ()	Imagos	No of m load	Dotootor D.T. /	Descriptor D.T ()
Images	No. of m. kpts.		Descriptor P.T (ms)	Images	No. of m. kpts.		Descriptor P.T (ms)
0		98.0889	50.9306	(1.03404	15.8883
1	82	70.3265	49.5822		1 118	1.033	14.0065
2	81	68.5167	50.2147	:	2 123	0.955046	15.2581
3		69.8322	48.9061				13.368
					-		
4		72.0198	50.058	-	.		13.7188
5	90	76.0154	54.5459		5 114	0.738283	16.6402
6		74.7668	51.7384		-	0.954495	19.1121
7	82	74.4828	52.0095				15.0238
							.
8		72.8272	55.2569				17.1726
9	104	77.9433	51.2832		103	0.99109	17.7062
Descriptor	SIFT			Descriptor	SIFT		
Detector	SIFT			Detector	FAST		
Avg. no. of matched keypoints	89			Avg. no. of matched keypoints	116		
Avg. detector processing time	75.5 ms			Avg. detector processing time	1.0 ms	8	
Avg. descriptor processing time	51.5 ms			Avg. descriptor processing time	15.8 ms	5	
Total Processing time	126.9 ms			Total Processing time	16.7 ms		
r tan r r to to to tan g amino							
Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)	Images	No. of m. kpts.	Detector P.T. (ms)	Descriptor P.T (ms)
Images 0	No. of m. kpts.						
0		67.2343	23.6989)	8.03581	30.7978
0	182	67.2343 59.9974	23.6989 19.1595	(1 67	8.03581 7.84804	30.7978 20.5416
0 1 2	182 193	67.2343 59.9974 59.8738	23.6989 19.1595 19.2185) 1 67 2 79	8.03581 7 7.84804 9 8.61409	30.7978 20.5416 22.3511
0	182 193	67.2343 59.9974	23.6989 19.1595	(0 67 2 79 3 78	8.03581 7.84804 8.61409 6.73633	30.7978 20.5416
0 1 2	182 193	67.2343 59.9974 59.8738	23.6989 19.1595 19.2185		0 67 1 67 2 79 3 78	8.03581 7.84804 8.61409 6.73633	30.7978 20.5416 22.3511
0 1 2 3 3	182 193 169 183	67.2343 59.9974 59.8738 61.913 63.661	23.6989 19.1595 19.2185 18.9975 18.8441) 1 67 2 79 3 78 4 79	8.03581 7.84804 8.61409 6.73633 7.21721	30.7978 20.5416 22.3511 24.253 24.7123
0 1 2 3 3 4 5	182 193 169 183 171	67.2343 59.9974 59.8738 61.913 63.661 60.0685	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136		0 1 67 2 79 3 78 4 79 5 82	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805	30.7978 20.5416 22.3511 24.253 24.7123 21.9379
0 1 2 3 3 4 5 6	182 193 169 183 171 195	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271		0 67 67 79 82 82 82 82 82 82 82 82 82 82 82 82 82	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072
0 1 2 3 3 4 5 5	182 193 169 183 171 195	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523		0 67 67 96 96 96 96 96 96 96 96 96 96 96 96 96	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839
0 1 2 3 3 4 5 6	182 193 169 183 171 195	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271		0 67 67 96 96 96 96 96 96 96 96 96 96 96 96 96	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072
0 1 2 3 3 4 5 5	182 193 169 183 171 195 194	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523		67 95 94 94 94 94 94 94 94 94 94 94 94 94 94	8.03581 7.84804 8.61409 6.73633 7.2172 6.68805 6.88987 6.93417 6.97928	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839
0 1 2 3 4 5 6 7 8	182 193 169 183 171 195 194 176 183	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878		67 2 75 3 78 4 75 5 84 6 95 7 95 8 94	8.03581 7.84804 8.61409 6.73633 7.2172 6.68805 6.88987 6.93417 6.97928	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 4 5 6 6 7 8 9 Descriptor	182 193 169 183 171 195 194 176 183 SIFT	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor	67 67 67 67 67 67 67 67 67 67 67 67 67 6	8.03581 7.84804 8.61409 6.73633 7.2172 6.68805 6.88987 6.93417 6.97928	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 11 22 33 44 55 66 77 88 9 Descriptor Detector	182 193 169 183 171 195 194 176 183 SIFT BRISK	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector	67 67 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.6.93417 6.697928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 11 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	182 193 169 183 171 195 194 176 183 SIFT BRISK	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector Avg. no. of matched keypoints	67 67 68 68 68 68 68 68 68 68 68 68 68 68 68	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.8987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 11 22 33 44 55 66 77 88 9 Descriptor Detector	182 193 169 183 171 195 194 176 183 SIFT BRISK	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector	67 67 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.8987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 11 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints	182 193 169 183 171 195 194 176 183 SIFT BRISK	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	67 67 68 68 68 68 68 68 68 68 68 68 68 68 68	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	182 193 169 183 171 195 194 176 183 SIFT BRISK	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 11 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 11 22 33 44 55 66 77 88 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Total Processing time Images 0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms)	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images Images 0 1	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
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0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time Images Images 0 1	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
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0 1 2 3 4 5 6 7 8 9 Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Total Processing time Images 0 1 2 3 4 5 6 7	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 130 136 137 147	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 13.5216 14.2964 14.5189	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
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0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 134 130 136 137 147 147 154	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 13.5216 14.2964 14.5189	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 134 130 136 137 147 147 154 151	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 134 130 136 137 147 147 154	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 134 130 136 137 147 147 154 151	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 134 130 136 137 147 154 151 SIFT AKAZE	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 130 136 137 147 147 154 151 SIFT AKAZE 141 59.3 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.35111 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 134 130 136 137 147 154 151 SIFT AKAZE 141 59.3 ms 13.7 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839 27.5458
0	182 193 169 183 171 195 194 176 183 SIFT BRISK 183 64.2 ms 20.9 ms 85.1 ms No. of m. kpts. 134 130 136 137 147 147 154 151 SIFT AKAZE 141 59.3 ms	67.2343 59.9974 59.8738 61.913 63.661 60.0685 67.4228 65.598 72.0929 63.8331 Detector P.T. (ms) 66.9877 53.7529 59.9157 56.5979 55.489 60.7313 60.0931 58.9536 59.0157	23.6989 19.1595 19.2185 18.9975 18.8441 19.9136 22.5271 24.523 21.5878 20.5549 Descriptor P.T (ms) 12.8019 13.5521 13.0084 14.5695 13.0251 14.2964 14.5189 13.3638	Descriptor Detector Avg. no. of matched keypoints Avg. detector processing time Avg. descriptor processing time	67 67 68 68 69 69 69 69 69 69 69 69 69 69 69 69 69	8.03581 7.84804 8.61409 6.73633 7.21721 6.68805 6.88987 6.93417 6.97928 8.04255	30.7978 20.5416 22.3511 24.253 24.7123 21.9379 27.6072 26.1839 27.5458