

# XEst Report

Real-time vision-based navigation module

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The Works

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## Chapter 1. QuEst+

### 1.1. configs:

TID: T00001

benchmark: KITTI

del\_T: 10.1

	Nister	Kukelova	QuEst	VEst
<b>T err mean</b>	0.1099	0.1361	0.0705	0.4624
<b>T err std</b>	0.1035	0.1354	0.0558	0.4343
<b>T err med</b>	0.0762	0.0711	0.0659	0.1415
<b>T err Q1</b>	0.0349	0.0528	0.0171	0.0331
<b>T err Q3</b>	0.1597	0.1635	0.1222	0.9533
<b>Q err mean</b>	0.0252	0.0283	0.0111	0.0233
<b>Q err std</b>	0.0295	0.0309	0.0087	0.0222
<b>Q err med</b>	0.0217	0.0253	0.0094	0.0179
<b>Q err Q1</b>	0.0101	0.0104	0.0046	0.0020
<b>Q err Q3</b>	0.0269	0.0333	0.0159	0.0361

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## Chapter 2. VEst+

### 2.1. configs:

TID: T00001

benchmark: KITTI

del\_T: 10.1

	VEst
T err mean	0.5789
T err std	0.4287
T err med	0.7895
T err Q1	0.0625
T err Q3	0.9712
Q err mean	0.0233
Q err std	0.0222
Q err med	0.0179
Q err Q1	0.0020
Q err Q3	0.0361

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## Chapter 3. QEKF

### 3.1. configs:

TID: T00001

benchmark: KITTI

del\_T: 10.1

	Nister	Kukelova	QuEst	VEst
GT-X T err mean	0.3350	0.3172	0.2905	0.5074
GT-X T err std	0.2013	0.2416	0.2386	0.3153
GT-X T err med	0.2628	0.3075	0.2093	0.4615
GT-X T err Q1	0.1526	0.0905	0.0858	0.2937
GT-X T err Q3	0.5099	0.4607	0.4933	0.8048
GT-X Q err mean	0.3332	0.3332	0.3332	0.3332
GT-X Q err std	0.0004	0.0004	0.0004	0.0004
GT-X Q err med	0.3331	0.3331	0.3331	0.3331
GT-X Q err Q1	0.3329	0.3329	0.3329	0.3329
GT-X Q err Q3	0.3334	0.3334	0.3334	0.3334
GT-X V err mean	0.5582	0.5393	0.4760	0.5692
GT-X V err std	0.2574	0.2790	0.3540	0.3057
GT-X V err med	0.5174	0.5345	0.4409	0.5293
GT-X V err Q1	0.3811	0.3055	0.1010	0.3440
GT-X V err Q3	0.7763	0.7766	0.8885	0.8760
Z-X T L1 mean	51481252446379574 98586475407795514 5546280514638080	83347260534648636 02560911812783951 9548603208166050	26297940259955895 18888811284517764 1517610949848436	86820416533167996 31756214767471439 6507457943801726
Z-X T L1 std	19262520849637021 23432724846011509 1777203536204043	31185689304684033 36076037443321719 9147958198433725	98397882430603797 51033093348740672 4040604189259903	32485225284411837 96914244279747930 0592565430549018
Z-X T L1 med	9.7359	1.9115	0.4529	3.0003
Z-X T L1 Q1	1.2972	0.7819	0.2138	2.0220

### Chapter 3. QEF

<b>Z-X T L1 Q3</b>	53225693073228744 26334409335097233 9964284074196992	22379339630720427 35074091610954996 1152175336429977	192171081727.8408	18690814425594929 04712142848.0000
<b>Z-X Q L1 mean</b>	1.0945	1.1131	1.0445	1.0994
<b>Z-X Q L1 std</b>	0.0897	0.1052	0.0354	0.0973
<b>Z-X Q L1 med</b>	1.0785	1.0911	1.0407	1.0588
<b>Z-X Q L1 Q1</b>	1.0504	1.0599	1.0156	1.0170
<b>Z-X Q L1 Q3</b>	1.1120	1.1270	1.0629	1.1609
<b>Z-X V L1 mean</b>	58369077478699908 52371897642265349 4410476122166234	81825716548191414 20352653705749227 6850156845070942	12686197432221023 26439560541990150 5196091408777138	20561984708985161 21149390152231866 7300914128299889
<b>Z-X V L1 std</b>	21839708990735800 48889403036867454 6516961074975889	30616379675061114 60880437804968540 1845748101088302	47467404332342397 22995670868816476 7320168744644442	76935901973107151 35405092492907102 8185008520712658
<b>Z-X V L1 med</b>	0.5573	0.4203	0.2515	0.3447
<b>Z-X V L1 Q1</b>	0.1073	0.1168	0.1013	0.1061
<b>Z-X V L1 Q3</b>	18298902233541254 90641767188133326 3603560737669120	94313980514477781 70085469877679327 9217420503875584	18712977167.2636	23564671856416421 7763528704.0000
<b>Z-X T L2 mean</b>	21277373671513860 93627131587570278 6569191826610758	64636268018727280 56704050883305595 4600309826897001	53055608293907381 79402165922866930 0749920737267405	75448282963574355 61283938465617762 7788930405972823
<b>Z-X T L2 std</b>	inf	inf	19851590868268334 67728476870025123 5257224852858933	28230162527006851 12079629394393802 7638259629445820
<b>Z-X T L2 med</b>	34.8113	1.6866	0.0736	4.9623
<b>Z-X T L2 Q1</b>	0.7587	0.3558	0.0259	2.9396
<b>Z-X T L2 Q3</b>	18132713843950788 00869584828718378 8425035637639578	45496050525923247 26544347098636281 4307702362889538	21396222098938246 725632.0000	37605443359883856 26314718828097232 7673564622188330
<b>Z-X Q L2 mean</b>	1.0000	1.0000	1.0000	1.0000
<b>Z-X Q L2 std</b>	0.0000	0.0000	0.0000	0.0000
<b>Z-X Q L2 med</b>	1.0000	1.0000	1.0000	1.0000
<b>Z-X Q L2 Q1</b>	1.0000	1.0000	1.0000	1.0000
<b>Z-X Q L2 Q3</b>	1.0000	1.0000	1.0000	1.0000
<b>Z-X V L2 mean</b>	27541357990388035 74058649450074380 1542768733446345	64642304531159826 02594577682693766 0362072752125030	16139551543106563 73118194162009814 2598988194525202	29762073006327305 16179646744038586 5769345587197121
<b>Z-X V L2 std</b>	inf	inf	60388672250483432 17446745019779171 3697932615429997	inf
<b>Z-X V L2 med</b>	0.1362	0.1318	0.0428	0.0881
<b>Z-X V L2 Q1</b>	0.0052	0.0061	0.0058	0.0090

### Chapter 3. QEF

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<b>Z-X V L2 Q3</b>	40906719083771430	58979789603675923	21395357266057068 5440.0000	27776743600992355
	49241336588785033	61087201790865077		45015886031225543
	3619405989239743	8170308636254664		7559879753644638