

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

	EightPt	Nister	Kukelova	QuEst	VEst
T err mean	0.1732	0.1099	0.1361	0.0705	0.3718
T err std	0.1271	0.1035	0.1354	0.0558	0.4204
T err med	0.1698	0.0762	0.0711	0.0659	0.1541
T err Q1	0.0639	0.0349	0.0528	0.0171	0.0248
T err Q3	0.2655	0.1597	0.1635	0.1222	0.9423
Q err mean	0.2538	0.0252	0.0283	0.0111	0.0406
Q err std	0.1695	0.0295	0.0309	0.0087	0.0392
Q err med	0.2735	0.0217	0.0253	0.0094	0.0180
Q err Q1	0.0530	0.0101	0.0104	0.0046	0.0076
Q err Q3	0.4107	0.0269	0.0333	0.0159	0.0657

Chapter 2. VEst+

2.1. configs:

TID: T00001

benchmark: KITTI

del_T: 10.1

	VEst
T err mean	0.5007
T err std	0.4395
T err med	0.2456
T err Q1	0.0702
T err Q3	0.9769
Q err mean	0.0406
Q err std	0.0392
Q err med	0.0180
Q err Q1	0.0076
Q err Q3	0.0657

Chapter 3. QEKF

3.1. configs:

TID: T00001

benchmark: KITTI

del_T: 10.1

	EightPt	Nister	Kukelova	QuEst	VEst
GT-X T er r mean	0.4477	0.3938	0.3240	0.3108	0.5026
GT-X T er r std	0.3053	0.2901	0.2546	0.2866	0.3103
GT-X T er r med	0.4511	0.3032	0.2948	0.1980	0.5109
GT-X T er r Q1	0.1869	0.1764	0.0883	0.0850	0.1636
GT-X T er r Q3	0.6175	0.4967	0.4885	0.5598	0.7645
GT-X Q er r mean	0.3332	0.3332	0.3332	0.3332	0.3332
GT-X Q er r std	0.0004	0.0004	0.0004	0.0004	0.0004
GT-X Q er r med	0.3331	0.3331	0.3331	0.3331	0.3331
GT-X Q er r Q1	0.3329	0.3329	0.3329	0.3329	0.3329
GT-X Q er r Q3	0.3334	0.3334	0.3334	0.3334	0.3334
GT-X V er r mean	0.4215	0.4542	0.4916	0.4136	0.4829
GT-X V er r std	0.2780	0.2768	0.3512	0.3117	0.2770
GT-X V er r med	0.4873	0.4563	0.4987	0.3405	0.4541
GT-X V er r Q1	0.1620	0.2053	0.1568	0.1533	0.3086
GT-X V er r Q3	0.5662	0.7001	0.8816	0.6827	0.6412
Z-X T L1 mean	255850966629656 020844358184073 585538621502268 53916	74538445434688 45823211701075 07821471622557 67138226	18438705244079 12609260768826 70544964831333 23245445	1460423742964 9908294488553 3727795660412 25941826483	2557562789975 4622036359841 5227317421473 70154301340
Z-X T L1 std	957306659203105 499653847432818 644134111862823 19021	27889732495934 84512500183241 55933358853003 69072877	68991317679056 07574205744744 45065220593352 84706043	5464405285684 9929624101513 5053077517778 95185068428	9569523705249 8578397279032 3919143605175 47496650316
Z-X T L1 med	226528344866648 .7500	11.0867	1.9115	0.4296	3.6533

Chapter 3. QEF

Z-X T L1 Q1	1.8815	1.2986	0.6464	0.2108	2.3711
Z-X T L1 Q3	143532607664725 198436712696121 263764916378204 52795	38929988208877 15675211304123 53630106626904 95397888	15246104354007 35877166230969 80135425638849 96963074	146203027144.8 737	1015219192067 5898634537334 86084489216.00 00
Z-X Q L1 mean	1.5171	1.0945	1.1131	1.0445	1.1475
Z-X Q L1 std	0.3112	0.0897	0.1052	0.0354	0.1380
Z-X Q L1 med	1.6538	1.0785	1.0911	1.0407	1.0690
Z-X Q L1 Q1	1.1670	1.0504	1.0599	1.0156	1.0323
Z-X Q L1 Q3	1.7602	1.1120	1.1270	1.0629	1.2598
Z-X V L1 mean	310256454513418 313128775921292 057762221520176 31556	28852199283616 22359565983438 35217414074816 96898682	43049649860769 81611002452641 11055083928408 60452947	6127474665198 5011747715811 8180582493624 26790427853	2580363660144 7317984877966 6476233686596 69177914148
Z-X V L1 std	116087335482442 497485420472614 014428633918087 84679	10795504457421 64755177617312 87903818427127 36732802	16107704039958 11507693435814 98748027652048 96609211	2292691084331 0156875899137 4609214855386 27823759478	9654836749543 5790169319843 0079078898840 92755987314
Z-X V L1 med	19762088115815. 4961	0.9681	0.2858	0.2275	0.2595
Z-X V L1 Q1	0.2611	0.2031	0.1863	0.1237	0.1177
Z-X V L1 Q3	570033592170754 947269873581438 479413430696183 71538	11090744352278 01627125013059 43029932898104 48220160	14557819694040 61722825732532 25116006976600 52214906	14236768606.48 79	3323139114179 7403973860855 445870084096.0 000
Z-X T L2 mean	335287920135271 209458204247986 517571036394972 54511	69753718731761 41439422770908 33889365511892 61989561	42233472011306 39628049635654 58164130205660 68734091	1738812938828 9052568082935 5866008377161 45470191961	3846275582064 0985360092668 0789663919941 92303466998
Z-X T L2 std	inf	inf	inf	6506042276787 2785807702186 9165517572032 87054886187	inf
Z-X T L2 med	194405835181999 68091114307584. 0000	45.4976	1.6865	0.0679	8.0867
Z-X T L2 Q1	1.9693	0.7603	0.2966	0.0226	3.9780
Z-X T L2 Q3	210320648553551 330840405099362 357643404776697 11704	80224341573861 68840874249231 54909945080077 44560895	14592634866292 97225463875178 28520299209089 66140421	1238432643246 8397719552.000 0	9966168520434 7467722562994 3519689956117 60028306675
Z-X Q L2 mean	1.0000	1.0000	1.0000	1.0000	1.0000

Chapter 3. QEF

Z-X Q L2 std	0.0000	0.0000	0.0000	0.0000	0.0000
Z-X Q L2 med	1.0000	1.0000	1.0000	1.0000	1.0000
Z-X Q L2 Q1	1.0000	1.0000	1.0000	1.0000	1.0000
Z-X Q L2 Q3	1.0000	1.0000	1.0000	1.0000	1.0000
Z-X V L2 mean	695473702857527 583878311753507 409003676821580 87061	58811698138952 08931527630008 87427042637347 87143003	16336996955507 29325327174975 48243666498744 10583047	2006143890765 1266307031125 1310223500844 62804118946	7573111324900 7645055874144 6890872417997 66097140607
Z-X V L2 std	inf	inf	inf	7506303107812 7502928296740 3483960695945 11892426313	inf
Z-X V L2 med	194350161311601 291868241920.00 00	0.3541	0.0424	0.0346	0.0402
Z-X V L2 Q1	0.0356	0.0302	0.0152	0.0101	0.0072
Z-X V L2 Q3	278850052981121 579792053149413 872033929242181 34469	73929149892035 97559442437341 61852958361348 12193279	27444686312719 98263804072189 38134468306565 55509747	1238382605030 49568256.0000	9097503106750 0460105177464 7271824813488 36438399062