

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	0.3959
T err std	0.1271	0.1035	0.1354	0.0558	0.4192
T err med	0.1698	0.0762	0.0711	0.0659	0.1389
T err Q1	0.0639	0.0349	0.0528	0.0171	0.0393
T err Q3	0.2655	0.1597	0.1635	0.1222	0.9563
Q err mean	0.2538	0.0252	0.0283	0.0111	0.0237
Q err std	0.1695	0.0295	0.0309	0.0087	0.0399
Q err med	0.2735	0.0217	0.0253	0.0094	0.0081
Q err Q1	0.0530	0.0101	0.0104	0.0046	0.0039
Q err Q3	0.4107	0.0269	0.0333	0.0159	0.0216

Chapter 2. VEst+

2.1. configs:

TID: T00001

benchmark: KITTI

del_T: 10.1

	VEst
T err mean	0.5320
T err std	0.4308
T err med	0.5884
T err Q1	0.0839
T err Q3	0.9671
Q err mean	0.0237
Q err std	0.0398
Q err med	0.0081
Q err Q1	0.0039
Q err Q3	0.0216

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	0.3732	0.3791	0.3632	0.3107	0.4793
GT-X T er r std	0.2982	0.2213	0.2984	0.2866	0.3404
GT-X T er r med	0.3918	0.4102	0.4451	0.1428	0.4857
GT-X T er r Q1	0.0885	0.1873	0.0963	0.0820	0.0982
GT-X T er r Q3	0.6234	0.5458	0.4991	0.5576	0.8122
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	0.5383	0.5040	0.4617	0.5210	0.4538
GT-X V er r std	0.2832	0.2884	0.2997	0.3447	0.3034
GT-X V er r med	0.5463	0.4902	0.4967	0.5757	0.3858
GT-X V er r Q1	0.2740	0.2037	0.1644	0.1487	0.1690
GT-X V er r Q3	0.7746	0.7683	0.6356	0.9183	0.7047
Z-X T L1 mean	265117394681009 744626589039098 130498702752867 27127	25237469971662 01771513560698 14723402945667 28576647	26982216332154 73682019071672 65370780975527 80305101	1431338151512 1959301058814 6514500368948 74042276839	2678002954139 0061435199776 4325547968478 20123787549
Z-X T L1 std	991978458170462 505431297262710 417791945211026 56483	94429965942954 70740770780127 74677107224318 72474157	10095820905073 92528912873397 65933613296952 36136251	5355576967576 9667002111691 4348726177718 37632807916	1002016953515 6648792269391 3682042336321 94246727686
Z-X T L1 med	235965004409467 .6250	10.6968	1.9115	0.3766	2.2748

Chapter 3. QEF

Z-X T L1 Q1	1.8837	1.3039	0.8080	0.2450	1.5162
Z-X T L1 Q3	904736705125739 375645136329154 434462296558535 99432	86661122928720 37412795322131 53199022625063 05880064	14061679117890 72930649867501 61338830446730 31556300	36300727710.78 79	6186967644951 2584427063074 3058459656192. 0000
Z-X Q L1 mean	1.5171	1.0945	1.1131	1.0445	1.0923
Z-X Q L1 std	0.3112	0.0897	0.1052	0.0354	0.1168
Z-X Q L1 med	1.6538	1.0785	1.0911	1.0407	1.0456
Z-X Q L1 Q1	1.1670	1.0504	1.0599	1.0156	1.0228
Z-X Q L1 Q3	1.7602	1.1120	1.1270	1.0629	1.1076
Z-X V L1 mean	926606313253705 954389316539017 050186555140505 63167	18867651120342 84686432533828 64820501084387 83936909	64718912515121 23640515492550 96197705386576 08326453	5000885943420 3245651916721 9160625693820 96703338196	1847968158295 6706749114678 7878217060515 23620663288
Z-X V L1 std	346704335661709 707550971207846 381793798957022 87601	70596286185504 43507276524508 72244567521439 33205883	24215599707617 98746235602858 43675341052664 34304891	1871160183061 2628717681452 8166400801321 72419370835	6914463710010 0318877755307 8426372379486 21334093030
Z-X V L1 med	20585322847132. 8398	1.2002	0.2879	0.2875	0.4838
Z-X V L1 Q1	0.1675	0.0928	0.1042	0.0850	0.1460
Z-X V L1 Q3	318834457986360 201379475644338 019006622887977 61267	13250657986197 76491265857887 58001145558382 69908582	20283284849685 02929536196273 22909138543267 16969779	3534846267.117 8	7382130730858 4892295765713 5385849888768. 0000
Z-X T L2 mean	397043847343663 069164049751324 664126402015937 36304	35866130541954 46234160007899 01030914874995 05001536	62549711383210 71523485293784 22933391580389 09467619	1490764541151 5748082810814 6587886023761 75218540683	9481311268498 1906644785663 1470259051809 43076901997
Z-X T L2 std	inf	inf	inf	5577930157340 4564215668061 8551123885110 66076957131	inf
Z-X T L2 med	210940109942525 93508680466432. 0000	42.2620	1.6866	0.0644	4.0322
Z-X T L2 Q1	1.9817	0.7654	0.4025	0.0317	1.2833
Z-X T L2 Q3	498186200649903 114097739241494 376657071143172 97343	60735853782365 07847294607235 73079443445882 62399632	21400042199919 36090237373728 06973479502119 51394810	7634672651529 40113920.0000	2343537283906 9972770983710 4651071432736 68590757503
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	102626780487371 753892974656132 049742736658956 17690	50126591322281 27813455571229 60581190725311 28163207	58498048760027 70374660652452 64444650242014 58361401	1825922582873 0506926406785 3009811992761 30393446550	1826323861976 1844505425518 7110628225361 37880665270
Z-X V L2 std	inf	inf	inf	6831976719884 3048977221924 7023770229195 49063071151	inf
Z-X V L2 med	210879699265215 263343116288.00 00	0.6285	0.0522	0.0557	0.1371
Z-X V L2 Q1	0.0202	0.0058	0.0066	0.0066	0.0134
Z-X V L2 Q3	627380674535504 400991554454601 484692113101747 51018	16951484709467 83903005281701 55093630218246 61782685	47628650399229 15844064593804 55661370012363 96164928	7634364043853 128704.0000	3030522149427 5398647240168 0111832775030 53078078138