XEst main

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init

```
close all; clear; clc
addpath(genpath('./'));

% config - datasets handled by cfg object
cfg = config_class( test_ID     = 'test_001', ...
                    benchmark   = 'ICL');
dlog = dlogger_class();
dlog.load_cfg(cfg);
quest = quest_class();
quest.load_cfg(cfg);
vest = vest_class();
vest.load_cfg(cfg);
qekf = qekf_handler_class();
qekf.load_cfg(cfg);
```

run

```
cntr  = 0;
for frame_idx = cfg.dat.keyFrames % --->> iter keyframes
  cntr = cntr+1;
  TQVW_sols = quest.get_pose(frame_idx, cfg.dat); % get pose
  TQVW_sols = vest.get_vel(cfg.dat.matches, TQVW_sols); % get velocity
  st_sols  = qekf.run_filter(TQVW_sols); % run filter
  dlog.log_state(cntr, frame_idx, TQVW_sols, st_sols);
end % for frame_idx = cfg.dats.keyFrames
```

results

```
quest_res   = quest.get_res(cfg, dlog);
vest_res    = vest.get_res(cfg, dlog);
qekf_res    = qekf.get_res(cfg, dlog);
```

ICL

	EightPt	*Nister*	*Kukelova*	*QuEst*
Tran err mean	*0.35684*	*0.36008*	*0.40947*	*0.37134*
Tran err std	*0.051426*	*0.068961*	*0.067391*	*0.05834*

Tran err median	0.34197	0.35476	0.42785	0.36769
Tran err Q_1	0.31048	0.29358	0.34804	0.31348
Tran err Q_3	0.4032	0.42658	0.47089	0.42921
Rot err mean	0.0010922	0.23039	0.22911	0.00058779
Rot err std	0.0006694	0.23005	0.22886	0.00033422
Rot err median	0.0011073	0.2292	0.22805	0.00059275
Rot err Q_1	0.00043139	0.0003558	0.00025794	0.00025402
Rot err Q_3	0.001753	0.46043	0.45796	0.00092156

ICL

	EightPt	Nister	Kukelova	QuEst
VEst Rot err mean	0.00046297	0.23063	0.22939	0.00059129
VEst Rot err std	0.00035141	0.23045	0.2292	0.00044614
VEst Rot err median	0.00034892	0.22928	0.22822	0.00060177
VEst Rot err Q_1	0.00019565	0.00018772	0.00019234	0.0001487
VEst Rot err Q_3	0.00073029	0.46108	0.45859	0.0010339

ICL

	EightPt	Nister	Kukelova	QuEst
St Tran err mean	0.34597	0.44745	0.42373	0.3748
St Tran err std	0.064454	0.2558	0.14587	0.058636
St Tran err median	0.34839	0.34327	0.43205	0.38247
St Tran err Q_1	0.29026	0.25479	0.30223	0.31904
St Tran err Q_3	0.40168	0.6401	0.54523	0.43056

	EightPt	Nister	Kukelova	QuEst
St Rot err mean	0.33336	0.33336	0.33336	0.33336
St Rot err std	0.00015922	0.00015922	0.00015922	0.00015922
St Rot err median	0.3333	0.3333	0.3333	0.3333
St Rot err Q_1	0.33324	0.33324	0.33324	0.33324
St Rot err Q_3	0.33348	0.33348	0.33348	0.33348

	EightPt	Nister	Kukelova	QuEst
St Vel err mean	0.59527	0.48225	0.55321	0.5635
St Vel err std	0.15689	0.28252	0.22298	0.13875
St Vel err median	0.61168	0.50357	0.49686	0.59203
St Vel err Q_1	0.46714	0.22282	0.35757	0.45911
St Vel err Q_3	0.7234	0.74168	0.74884	0.66788

	EightPt	Nister	Kukelova	QuEst
St Tran L1 mean	3.2149	3.0257	2.3761	3.056
St Tran L1 std	0.95705	0.56802	1.1147	1.002
St Tran L1 median	3.3504	3.1466	2.0974	3.1899
St Tran L1 Q_1	2.4737	2.5035	1.3978	2.2295
St Tran L1 Q_3	3.956	3.5479	3.3544	3.8825

	EightPt	Nister	Kukelova	QuEst
St Rot L1 mean	1.0052	1.3483	1.3524	1.0038
St Rot L1 std	0.002335	0.34532	0.34978	0.0013152
St Rot L1 median	1.0048	1.3312	1.3365	1.0035
St Rot L1 Q_1	1.003	1.0038	1.0034	1.0026
St Rot L1 Q_3	1.0074	1.6928	1.7015	1.0049

	EightPt	Nister	Kukelova	QuEst
St Vel L1 mean	0.067919	0.057008	0.057698	0.062301
St Vel L1 std	0.068516	0.058461	0.056852	0.062366
St Vel L1 median	0.056502	0.044124	0.049989	0.051921
St Vel L1 Q_1	0.0014964	0.0016428	0.001965	0.0017971
St Vel L1 Q_3	0.13434	0.11237	0.11343	0.12281

	EightPt	Nister	Kukelova	QuEst
St Tran L2 mean	5.6024	4.5372	2.9114	5.1004
St Tran L2 std	3.056	1.674	2.6707	2.9253
St Tran L2 median	5.9801	5.0411	1.8828	5.31
St Tran L2 Q_1	2.7338	3.0829	0.85482	2.4678
St Tran L2 Q_3	8.4711	5.9916	4.9679	7.733

	EightPt	Nister	Kukelova	QuEst
St Rot L2 mean	1	1	1	1
St Rot L2 std	1.1102e-16	1.4687e-16	1.3597e-16	1.1102e-16
St Rot L2 median	1	1	1	1
St Rot L2 Q_1	1	1	1	1
St Rot L2 Q_3	1	1	1	1

	EightPt	Nister	Kukelova	QuEst
St Vel L2 mean	0.0039417	0.0035203	0.0026127	0.0036069
St Vel L2 std	0.0042078	0.0042152	0.0027162	0.0039767
St Vel L2 median	0.0028983	0.0018798	0.0020832	0.0024202
St Vel L2 Q_1	1.4434e-06	1.5154e-06	1.8556e-06	1.8368e-06
St Vel L2 Q_3	0.007882	0.007039	0.0052235	0.0072119

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