eval_plots

September 12, 2017

1 Draw accuracy plots from recorded data

```
In [4]: get_ipython().magic('run util_notebook.py')
        get_ipython().magic('run -i config.py')
        get_ipython().magic('run -i geometry.py')
        get_ipython().magic('run -i matching.py')
```

```
<IPython.core.display.Javascript object>


<IPython.core.display.Javascript object>
```

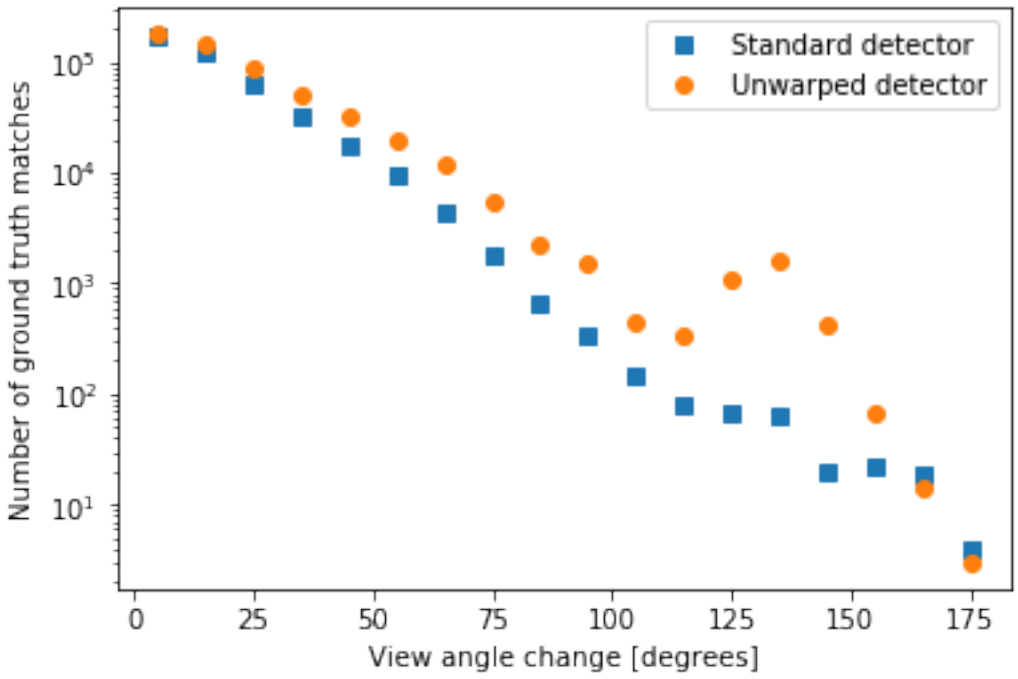
```
In [3]: DIR_OUT_EVAL
```

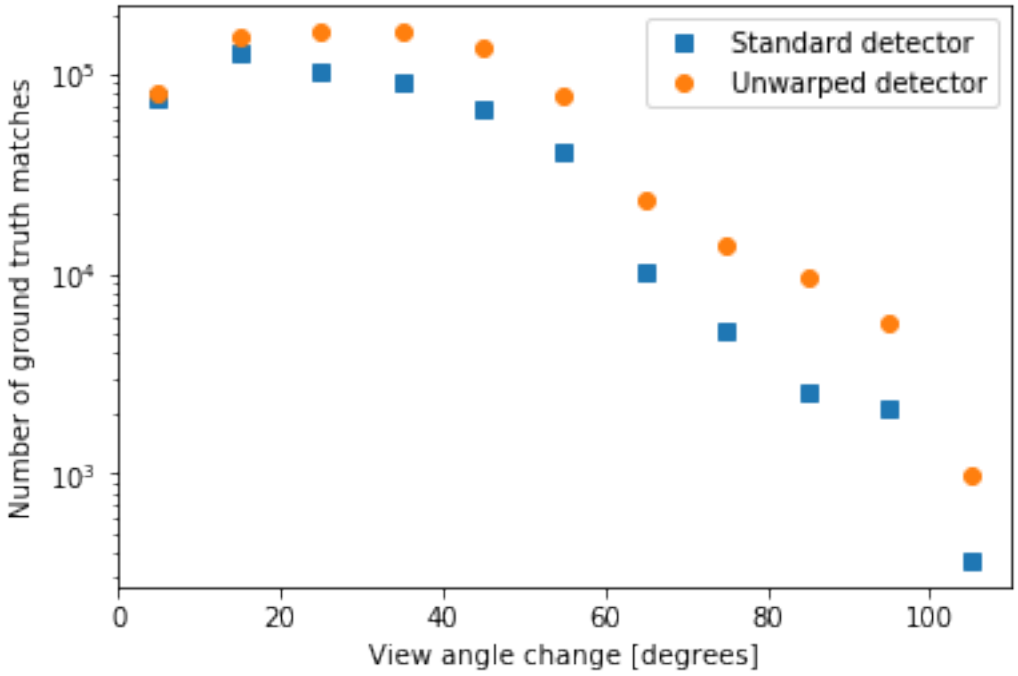
```
Out[3]: '../../out/eval'
```

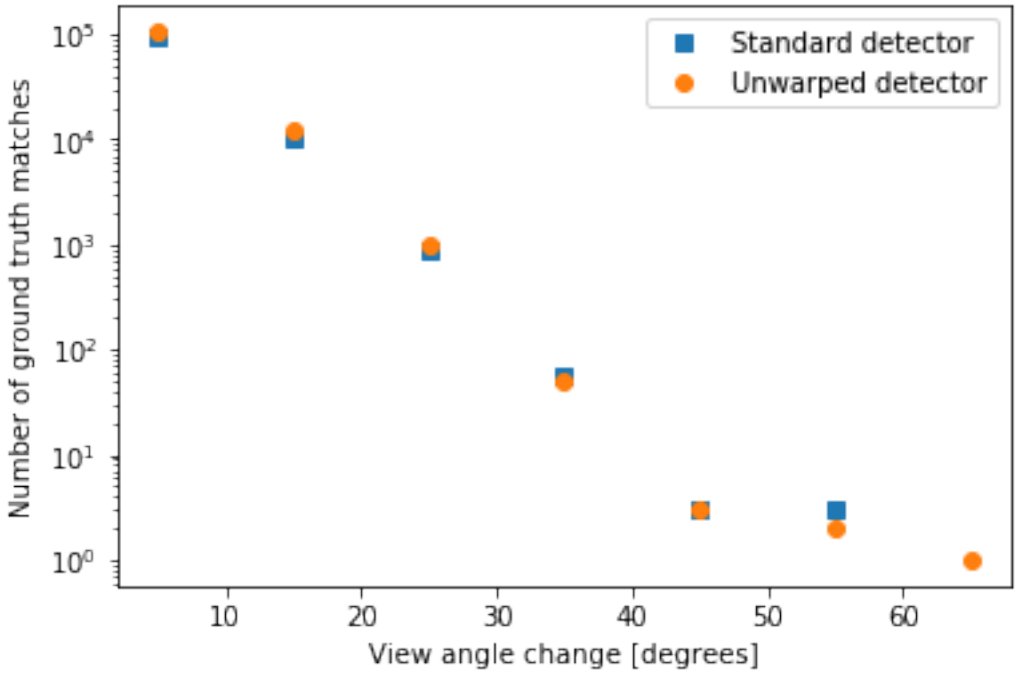
```
In [7]: # Load the evaluation measurement files

        # evaluated on syntetic
        vs_all_esyn = merge_accs_from_dir(pp(DIR_OUT_EVAL, 'eval_synth_all_long'))

        # evaluated on architectural
        vs_all_earch = merge_accs_from_dir(pp(DIR_OUT_EVAL, 'eval_arch_all_long'))

        # evaluated on 7scenes
        vs_all_e7sc = acc_merge_list([
                merge_accs_from_dir(pp(DIR_OUT_EVAL, 'eval_7sc_arch-7sc_short')),
                merge_accs_from_dir(pp(DIR_OUT_EVAL, 'eval_7sc_syn-7sc_short')),
        ])
```

```
Merge 50 files
Merge 2 files
Merge 4 files
Merge 4 files
```

In [8]:
```
# Number of detected points

plot_acc_gt(vs_all_earch, shard=10,
        save=pp(DIR_OUT_FIGURES, 'gt', 'gt_earch.pdf')
)

plot_acc_gt(vs_all_esyn, shard=10,
        save=pp(DIR_OUT_FIGURES, 'gt', 'gt_esyn.pdf')
)

plot_acc_gt(vs_all_e7sc, shard=10,
        save=pp(DIR_OUT_FIGURES, 'gt', 'gt_e7sc.pdf')
)
```



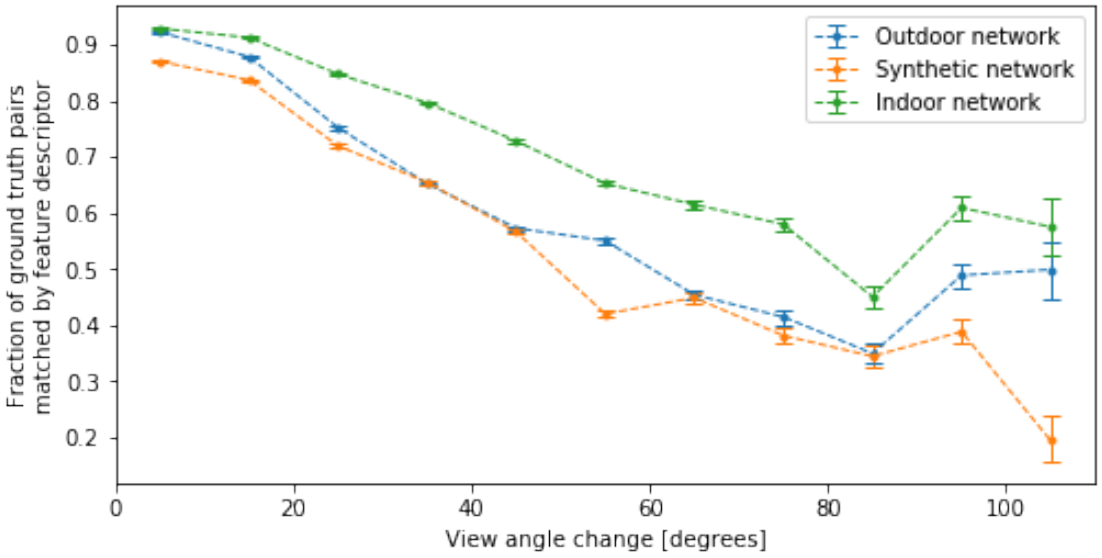


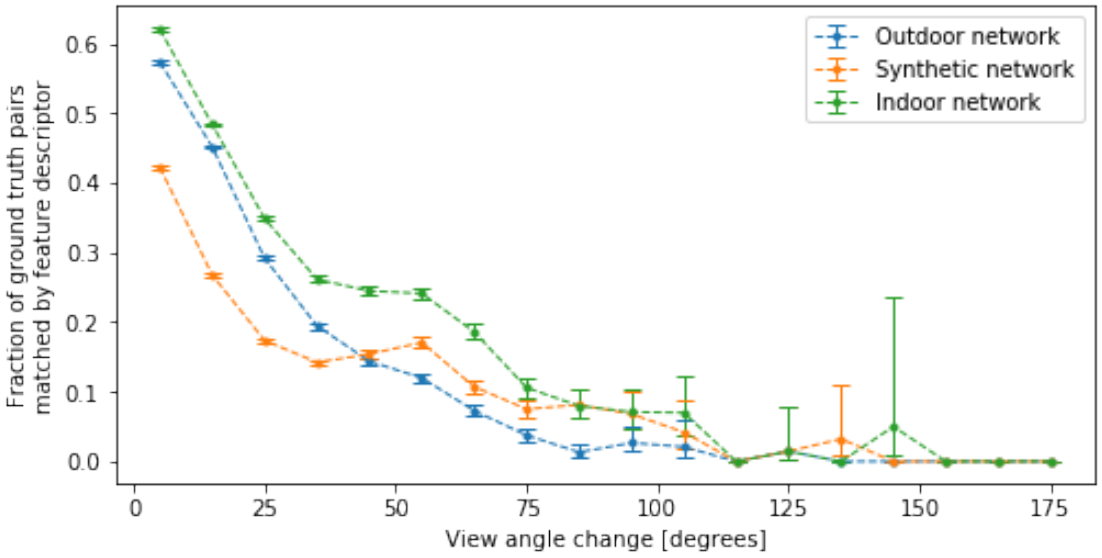


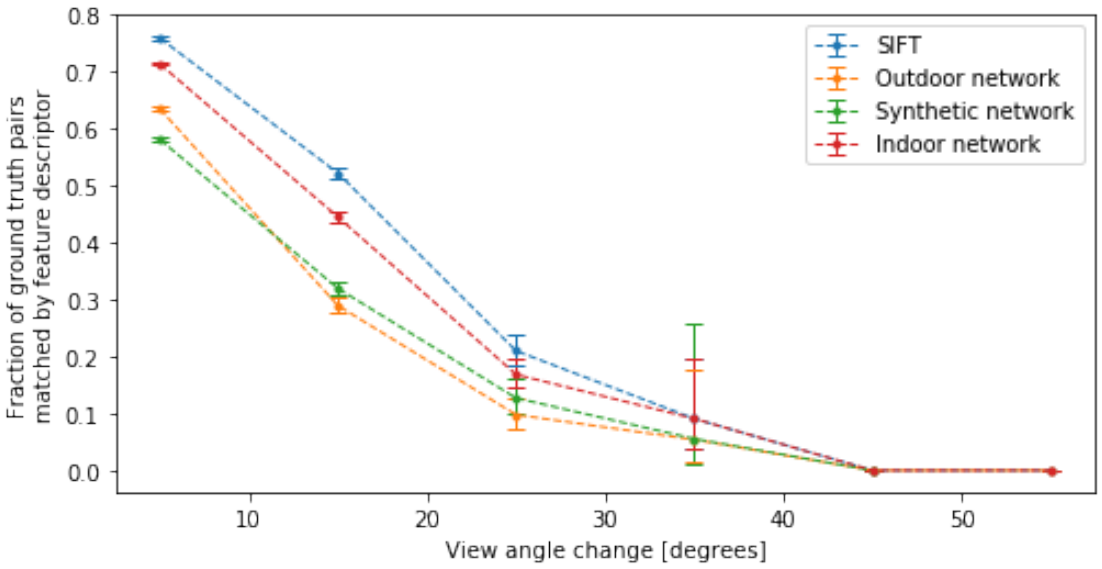
In [9]: *# Comparison between training datasets*

```
plot_acc(
        vs_all_esyn,
        #eval_ds = 'Synthetic',
        shard = 10,
        desc_ids = [
                #('flat', 'sift', 'SIFT'),
                ('flat', 'net_arch_int', 'Outdoor network'),
                ('flat', 'net_syn_int', 'Synthetic network'),
                ('flat', 'net_7sc_int', 'Indoor network'),
        ],
        save=pp(DIR_OUT_FIGURES, 'dset_comp', 'dset_accuracy_esyn.pdf'),
)

plot_acc(
        #vs_all_earch,
        vs_all_earch,
        #eval_ds = 'Architectural',
        shard = 10,
        desc_ids = [
                #('flat', 'sift', 'SIFT'),
                ('flat', 'net_arch_int', 'Outdoor network'),
                ('flat', 'net_syn_int', 'Synthetic network'),
                ('flat', 'net_7sc_int', 'Indoor network'),

        ],
        save=pp(DIR_OUT_FIGURES, 'dset_comp', 'dset_accuracy_earch.pdf'),
)

plot_acc(
        vs_all_e7sc,
        #eval_ds = '7 Scenes',
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'SIFT'),
                ('flat', 'net_arch_int', 'Outdoor network'),
                ('flat', 'net__syn_int', 'Synthetic network'),
                ('flat', 'net_7sc_int', 'Indoor network'),

        ]
)
```

Out[9]: <matplotlib.axes._subplots.AxesSubplot at 0x7fa6345cf860>


Outdoor network
Synthetic network
Indoor network
Fraction of ground truth pairs matched by feature descriptor
View angle change [degrees]
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0
20
40
60
80
100

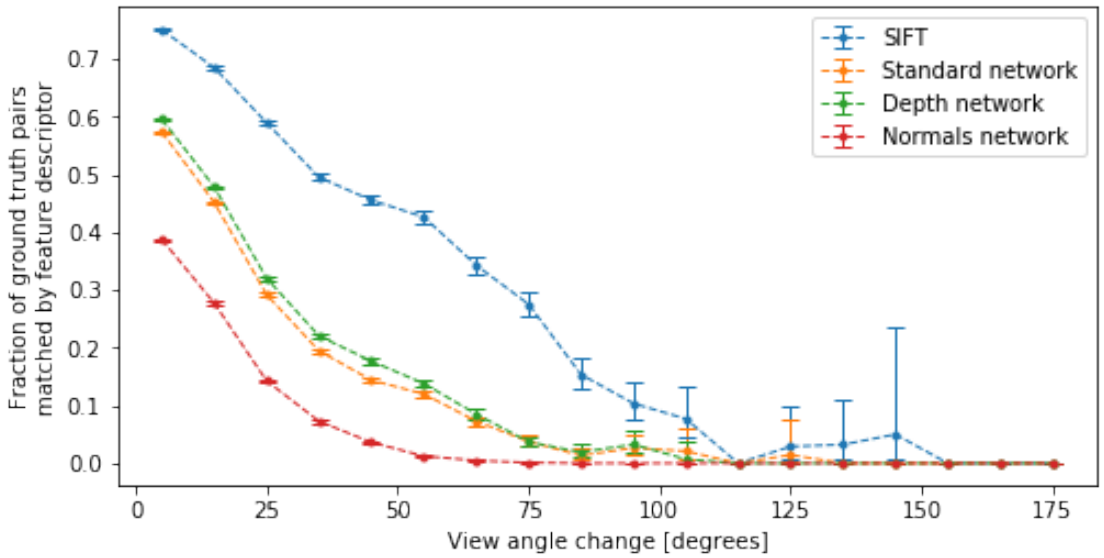

Outdoor network
Synthetic network
Indoor network
Fraction of ground truth pairs matched by feature descriptor
View angle change [degrees]
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
25
50
75
100
125
150
175

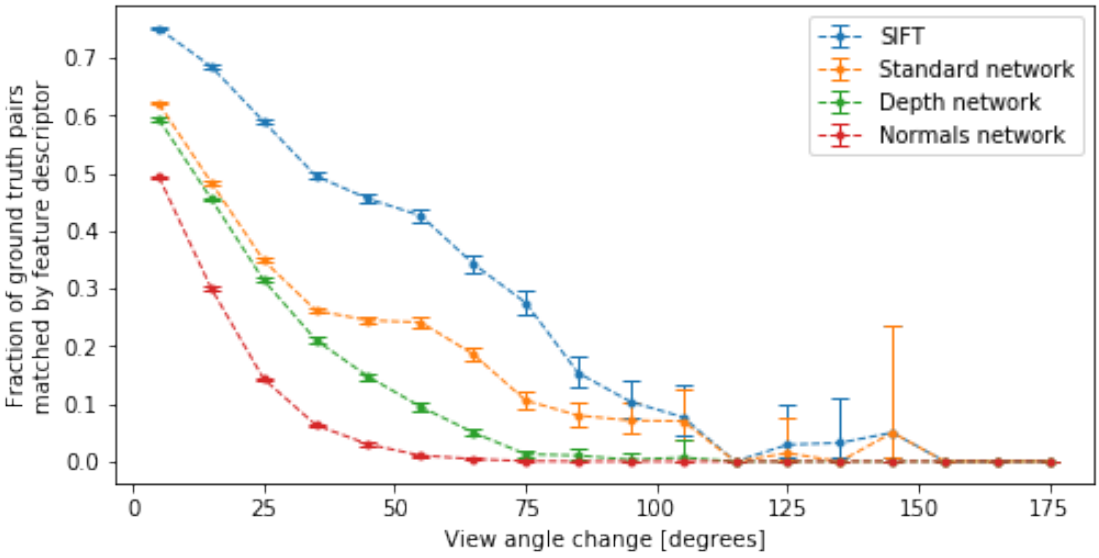


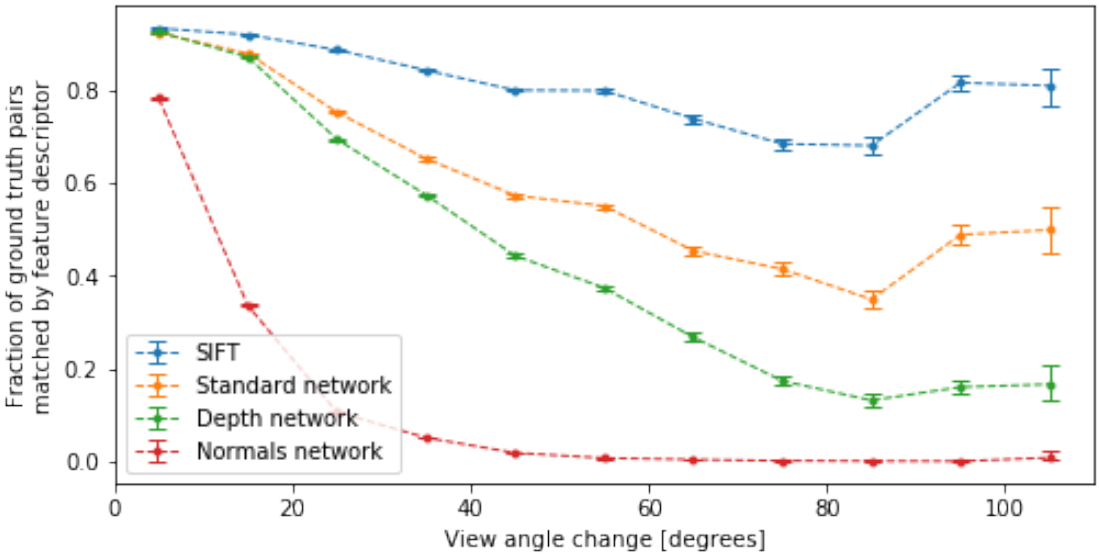
In [12]:
```
# Comparison between flat / depth / normals networks

plot_acc(
        vs_all_earch,
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'SIFT'),
                ('flat', 'net_arch_int', 'Standard network'),
                ('flat', 'net_arch_depth', 'Depth network'),
                ('flat', 'net_arch_norm', 'Normals network'),
        ],
        save = pp(DIR_OUT_FIGURES, 'depth', 'std_depthnorm_arch_earch.pdf')
)

plot_acc(
        vs_all_earch,
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'SIFT'),
                ('flat', 'net_7sc_int', 'Standard network'),
                ('flat', 'net_7sc_depth', 'Depth network'),
                ('flat', 'net_7sc_norm', 'Normals network'),
        ],
        save = pp(DIR_OUT_FIGURES, 'depth', 'std_depthnorm_7sc_earch.pdf')
)

plot_acc(
        vs_all_esyn,
```

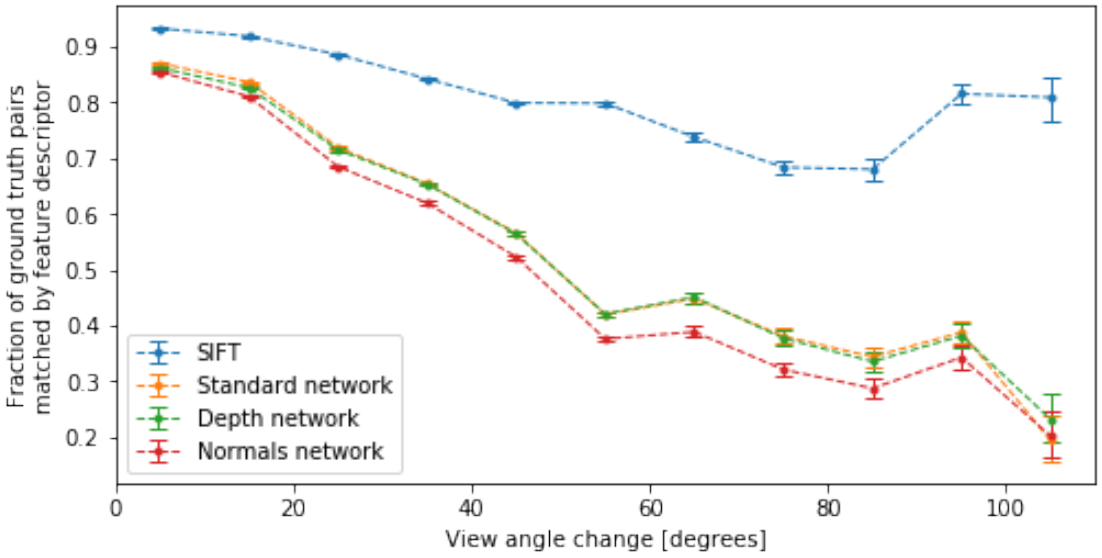
```
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'SIFT'),
                ('flat', 'net_arch_int', 'Standard network'),
                ('flat', 'net_arch_depth', 'Depth network'),
                ('flat', 'net_arch_norm', 'Normals network'),
        ],
        save = pp(DIR_OUT_FIGURES, 'depth', 'std_depthnorm_arch_esyn.pdf')
)

plot_acc(
        vs_all_esyn,
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'SIFT'),
                ('flat', 'net_syn_int', 'Standard network'),
                ('flat', 'net_syn_depth', 'Depth network'),
                ('flat', 'net_syn_norm', 'Normals network'),
        ],
        save = pp(DIR_OUT_FIGURES, 'depth', 'std_depthnorm_syn_esyn.pdf')
)
```

Out[12]: <matplotlib.axes._subplots.AxesSubplot at 0x7fa63403f860>



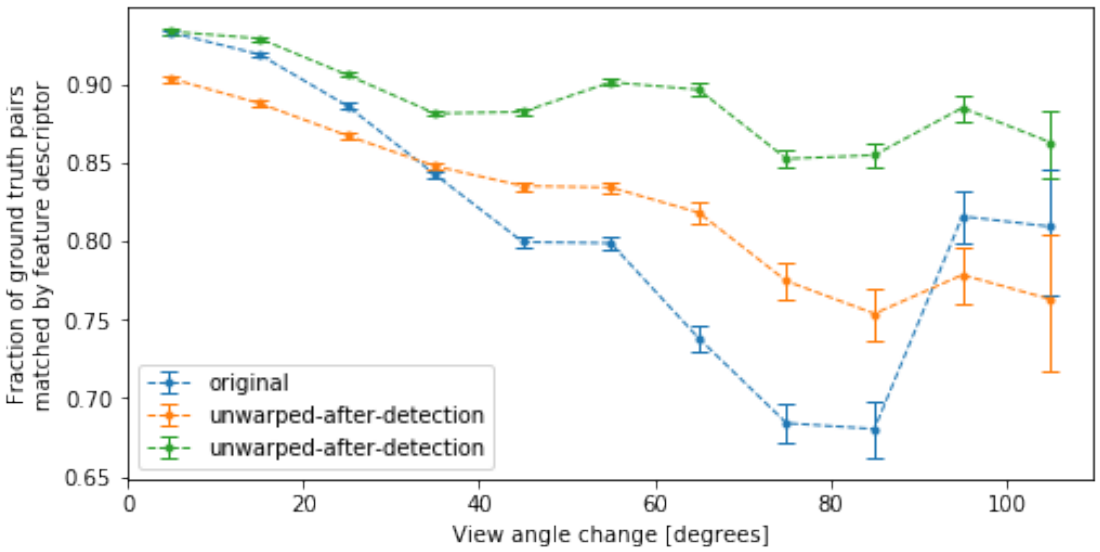

SIFT
Standard network
Depth network
Normals network
Fraction of ground truth pairs matched by feature descriptor
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
25
50
75
100
125
150
175
View angle change [degrees]

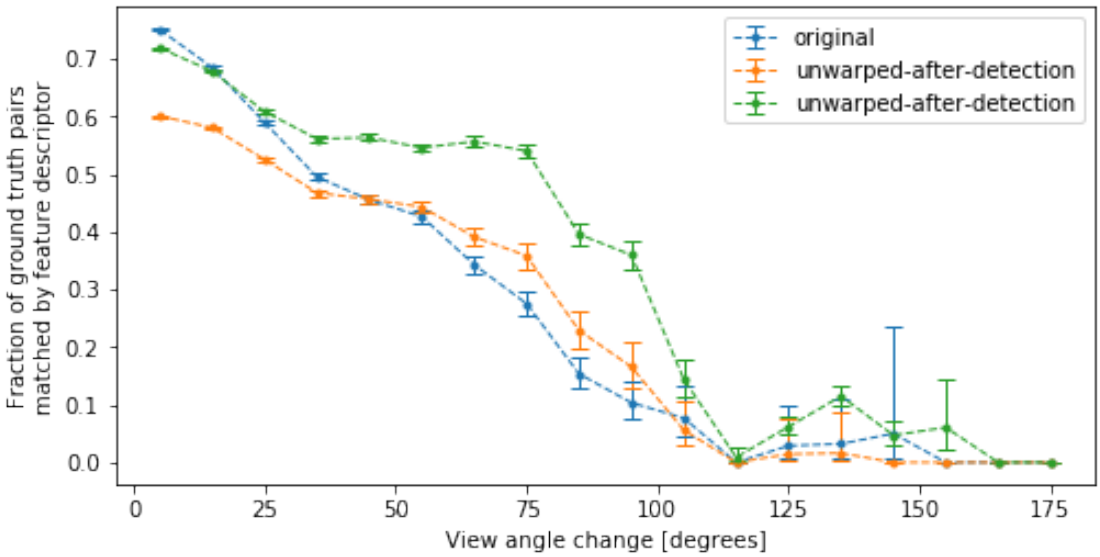

SIFT
Standard network
Depth network
Normals network
Fraction of ground truth pairs matched by feature descriptor
0.0
0.2
0.4
0.6
0.8
0
20
40
60
80
100
View angle change [degrees]



In [13]:
```
# Unwarp before or after detection

plot_acc(
        vs_all_esyn,
        #eval_ds = 'Synthetic',
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'original'),
                ('unwarp', 'sift', 'unwarped-after-detection'),
                ('unwarp_det', 'sift', 'unwarped-after-detection'),
        ],
        save = pp(DIR_OUT_FIGURES, 'unw_comp', 'unw_comp_esyn.pdf'),
)

plot_acc(
        vs_all_earch,
        #eval_ds = 'Architectural',
        shard = 10,
        desc_ids = [
                ('flat', 'sift', 'original'),
                ('unwarp', 'sift', 'unwarped-after-detection'),
                ('unwarp_det', 'sift', 'unwarped-after-detection'),
        ],
        save = pp(DIR_OUT_FIGURES, 'unw_comp', 'unw_comp_earch.pdf')
)
```

Out[13]: <matplotlib.axes._subplots.AxesSubplot at 0x7fa6349e7400>


Fraction of ground truth pairs
matched by feature descriptor
0.90
0.85
0.80
0.75
0.70
0.65
0
20
40
60
80
100
View angle change [degrees]
original
unwarped-after-detection
unwarped-after-detection


Fraction of ground truth pairs
matched by feature descriptor
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
25
50
75
100
125
150
175
View angle change [degrees]
original
unwarped-after-detection
unwarped-after-detection

In [ ]:

In [ ]:

In [ ]: