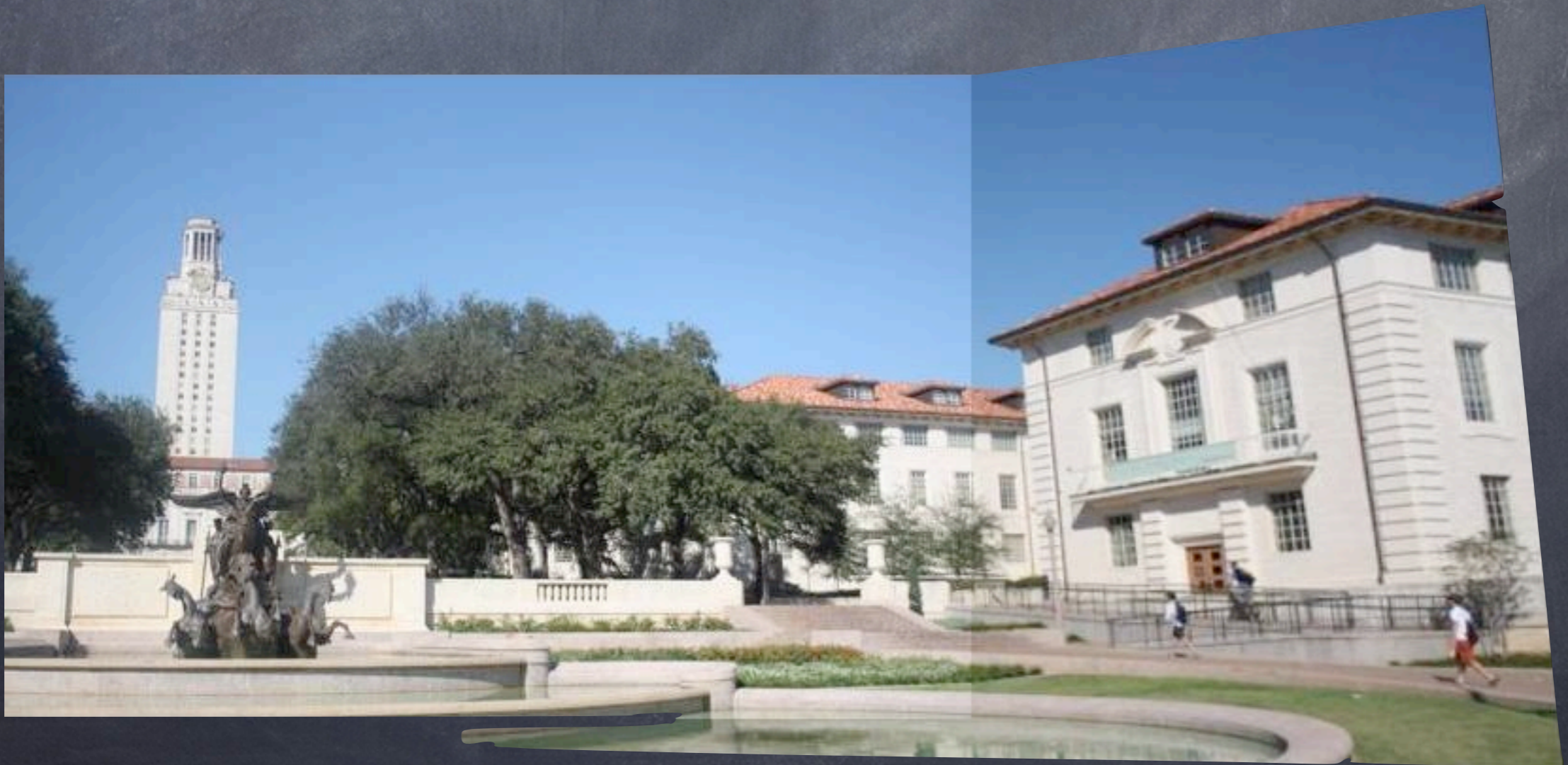


Assignment 2: Image Mosaics



Feature
Detection

Feature
Description

Feature
Matching

Good
Correspondences

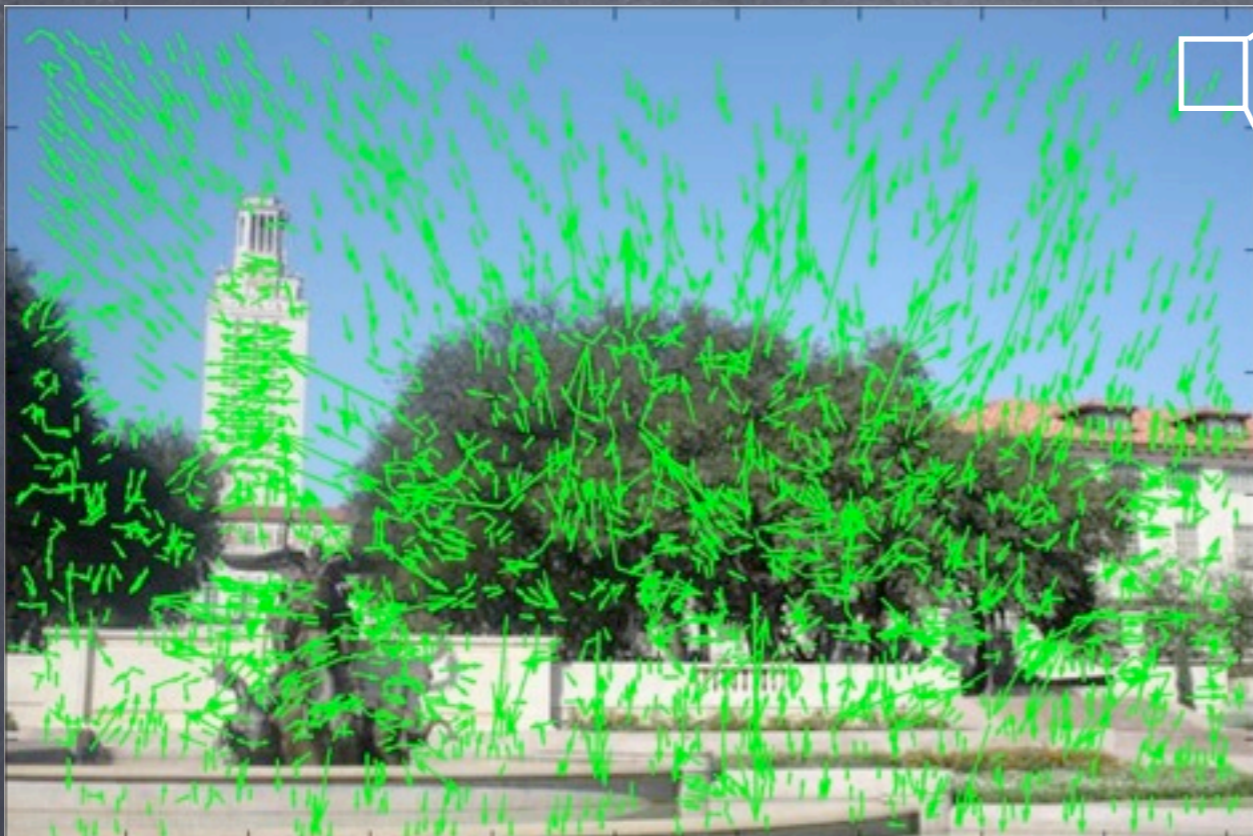
Homography
Estimation

Image
Composition

Feature
Detection



Feature
Description



0.1084
0.0361
0.6181
0.5671
0.7461
0.6625
0.5233
0.2599
0.9620
0.5402
0.0303
0.6963
0.5197
0.0590
0.8900
0.3302
0.2297
0.1139
0.3109
0.2284
0.6520
0.0662
0.2754
.
.
.

	Detection	Description
Input		

	Detection	Description
Input	Entire image	

	Detection	Description
Input	Entire image	Salient points

	Detection	Description
Input	Entire image	Salient points
Goal		

	Detection	Description
Input	Entire image	Salient points
Goal	Detect candidates	

	Detection	Description
Input	Entire image	Salient points
Goal	Detect candidates	Describe for matching

Feature
Matching



Feature
Matching

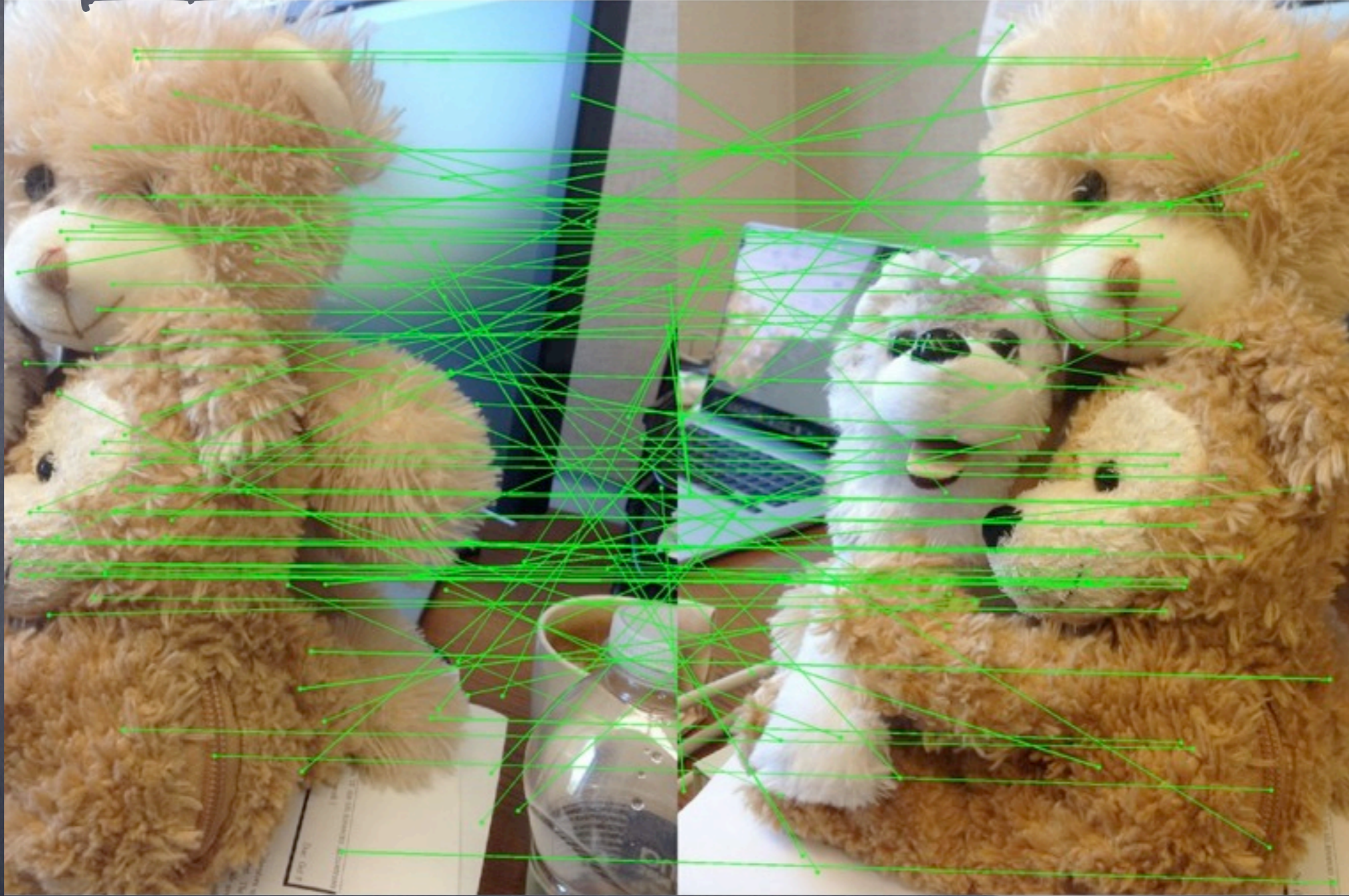


But there are outliers...

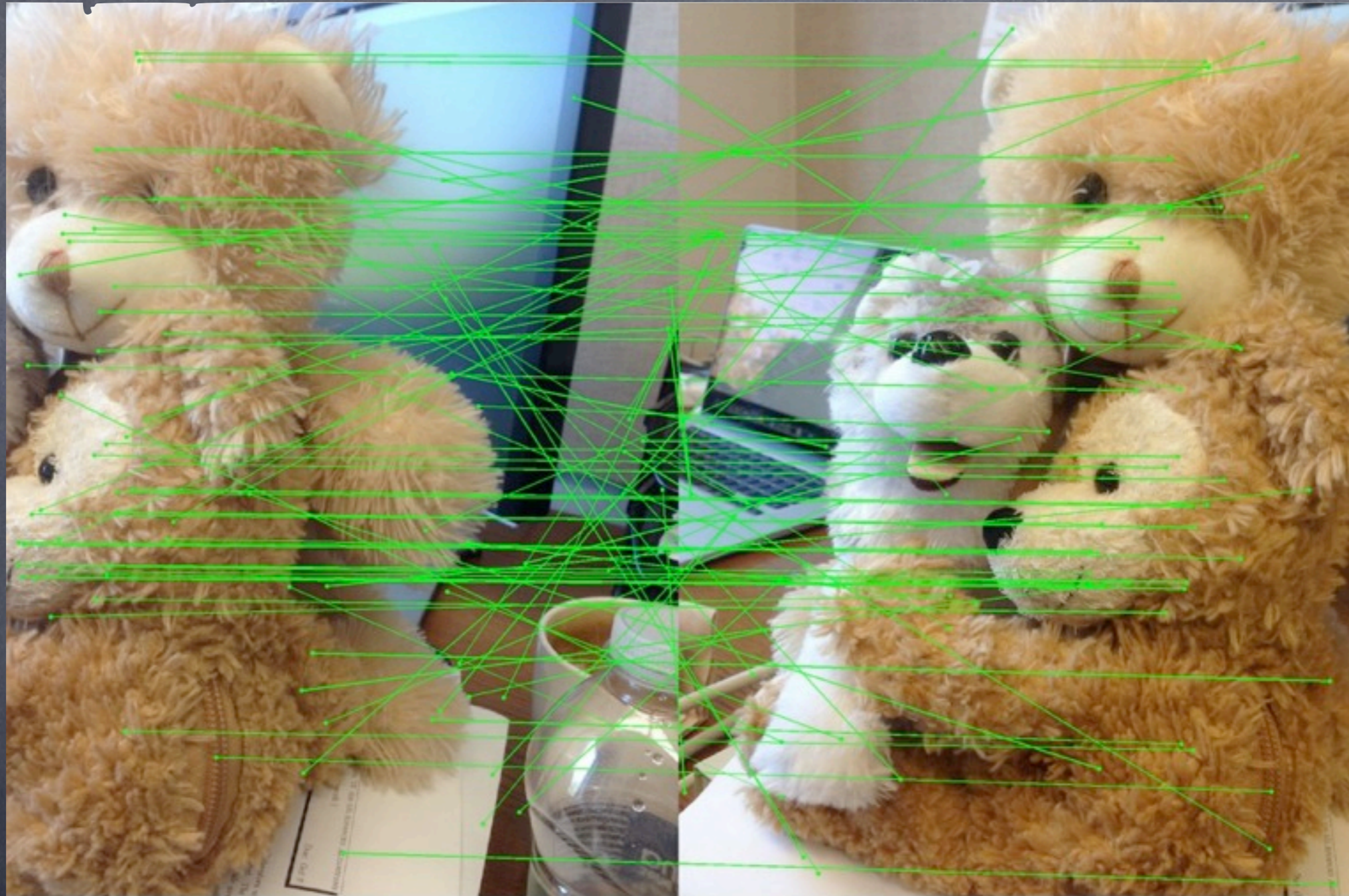
Feature Matching



Feature Matching



Feature
Matching



So what do we do?

Good Correspondences



Good Correspondences



Good
Correspondences



How?

Homography Estimation



0.1084	0.0361	0.6181
0.5671	0.7461	0.6625
0.5233	0.2599	1.0000

Image
Composition



Image
Composition



Feature
Detection

Feature
Description

Feature
Matching

Good
Correspondences

Homography
Estimation

Image
Composition

Feature Detection

Random
Sift
Harris
Awesome

Feature Description

Random
Sift
Window
Awesome

Feature Matching

Random
Mutual
Ratio
Awesome

Good Correspondences

Random
RANSAC
Awesome

Homography Estimation

Groundtruth
cp2tform

Image Composition

Simple
Overlay
Awesome

Feature Detection

Random
Sift
Harris
Awesome

Feature Description

Random
Sift
Window
Awesome

Feature Matching

Random
Mutual
Ratio
Awesome

Good Correspondences

Random
RANSAC
Awesome

Homography Estimation

Groundtruth
cp2tform

Image Composition

Simple
Overlay
Awesome

You get | You implement | Pick one | Optional

How to run

• runme.m

```
run_configurations = { ...
    % {'all', 'sift', 'sift', 'ratio', 'RANSAC', 'cp2tform', 'simple'}, ...
    % {'test01', 'harris', 'window', 'ratio', 'RANSAC', 'cp2tform', 'simple'}, ...
    % {'test01', 'harris', 'sift', 'ratio', 'RANSAC', 'cp2tform', 'simple'}, ...
    % {'test01', 'sift', 'window', 'ratio', 'RANSAC', 'cp2tform', 'simple'}, ...
    % {'test01', 'sift', 'sift', 'ratio', 'RANSAC', 'cp2tform', 'simple'}, ...
    {'all', 'random', 'random', 'random', 'random', 'groundtruth', 'simple'}
};
```

• runme_generategroundtruth.m

Tips

- Code is OK if you can prove to yourself (and in the writeup) that it's OK.
 - No examples page.
- Some input examples are HARD.

Send me your images!!!



Start Early!!