

1. Five fundamental matrices $F(2)$ for every stereo image pair:

pair1

-0.000000171809752	0.000003094089612	0.000914793482346
-0.000003155287796	0.000000030402468	0.003011133505589
-0.000635778961154	-0.002996164432336	-0.122214119895489

pair2

0.000000001903859	-0.000001662609870	-0.000122136079331
0.000001665329174	-0.000000141553200	-0.004235954169261
0.000120256730066	0.004324681687859	-0.000039180644196

pair3

-0.000000004421139	0.000000011237766	0.000234889860473
-0.000000104972151	0.000000109479604	0.005187502666778
-0.000281568441118	-0.005317282589611	0.023031780303431

pair4

-0.000000765619636	-0.000001308531535	-0.003105911781929
0.000002266047610	0.000000038064309	-0.000310477461500
0.003867183291998	0.000244828477845	-0.084119256661778

pair5

-0.000000007382680	0.000001385567542	-0.001250481953172
-0.000001397461343	0.000000016679215	0.002024087906838
0.001277157783165	-0.002131010870463	0.076102333124724

2. Five figures of the stereo image pairs

pair1

magenta point ->

selected point in image1 -> [286.6,307.6]

mapped point in image2 -> [313.8,309.9]

cyan point ->

selected point in image2 -> [848.9,600]

mapped point in image1 -> [841.5,596.8]

epipolar line for F2 in image2 (line(x,y) function in Matlab)

vector x:

1.000000

1026.000000

vector y:

578.610455

-301.726708

epipolar line for F2 in image1 (line(x,y) function in Matlab)

vector x:

1.000000

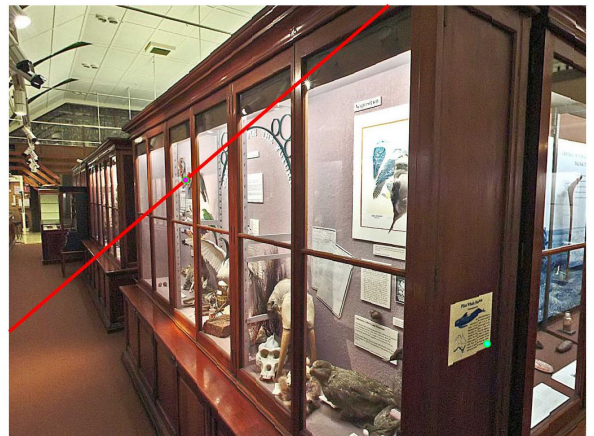
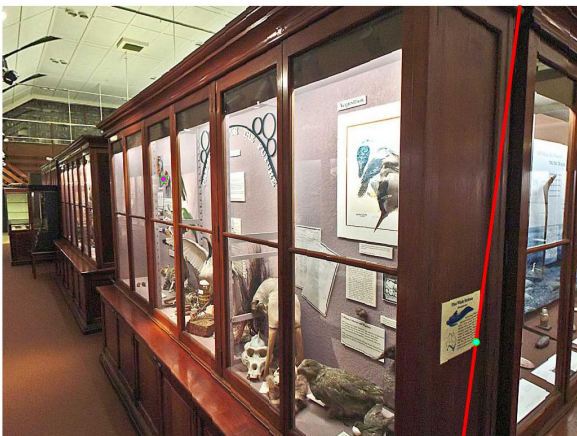
1026.000000

vector y:

6995.112277

-806.212426

=> epipolar lines pass through the right points



CS537 HW3 Bonus

pair2

magenta point ->

selected point in image1 -> [293.2,213.6]

mapped point in image2 -> [326.9,212.6]

cyan point ->

selected point in image2 -> [274.7,360.7]

mapped point in image1 -> [251.2,361.6]

epipolar line for F2 in image2 (line(x,y) function in Matlab)

vector x:

1.000000

721.000000

vector y:

253.703443

162.853026

epipolar line for F2 in image1 (line(x,y) function in Matlab)

vector x:

1.000000

721.000000

vector y:

408.863373

272.784093

=> epipolar lines pass through the right points



CS537 HW3 Bonus

pair3

magenta point ->

selected point in image1 -> [165.1,35.43]

mapped point in image2 -> [130,35.04]

cyan point ->

selected point in image2 -> [71.03,62.83]

mapped point in image1 -> [108,63.09]

epipolar line for F2 in image2 (line(x,y) function in Matlab)

vector x:

1.000000

433.000000

vector y:

40.894900

21.310808

epipolar line for F2 in image1 (line(x,y) function in Matlab)

vector x:

1.000000

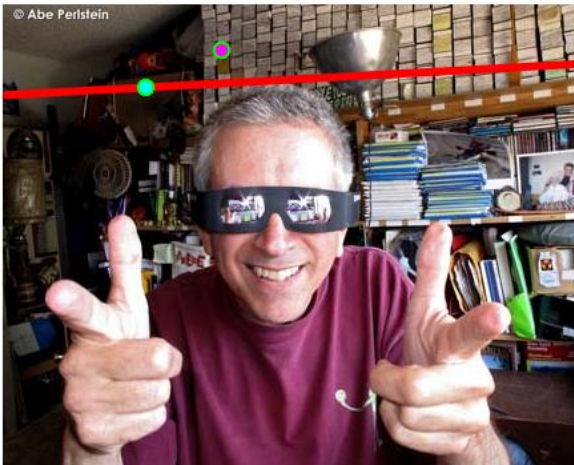
433.000000

vector y:

68.815880

45.344705

=> epipolar lines pass through the right points



CS537 HW3 Bonus

pair4

magenta point ->

selected point in image1 -> [429.3,338.6]

mapped point in image2 -> [488.4,348.2]

cyan point ->

selected point in image2 -> [459.9,401.1]

mapped point in image1 -> [399.9,386.5]

epipolar line for F2 in image2 (line(x,y) function in Matlab)

vector x:

1.000000

578.000000

vector y:

-2451.192014

862.527702

epipolar line for F2 in image1 (line(x,y) function in Matlab)

vector x:

1.000000

578.000000

vector y:

-4778.388772

2693.287272

=> epipolar lines pass through the right points



CS537 HW3 Bonus

pair5

magenta point ->

selected point in image1 -> [781.6,204.4]

mapped point in image2 -> [856.4,208.1]

cyan point ->

selected point in image2 -> [610.6,1246]

mapped point in image1 -> [555.1,1246]

epipolar line for F2 in image2 (line(x,y) function in Matlab)

vector x:

1.000000

1375.000000

vector y:

-681.948484

747.595193

epipolar line for F2 in image1 (line(x,y) function in Matlab)

vector x:

1.000000

1375.000000

vector y:

1451.086717

941.531836

=> epipolar lines pass through the right points

