

We have to use the 8 pairs of images to estimate the **corresponding points** in the “camera planes” of both the cameras.

For that, for each pair cam—0-i and cam—1-i, I found all the corresponding points and combined them into a vector. Then I applied the **findFundamentalMat** function on the combined vector using the max distance from the epipolar line as 3 and the confidence as 0.99.

Finally, I obtained the fundamental matrix of the 2-camera setting as:

```
F = [-7.272237e-08,  5.634126e-07, -0.000354951;  
      1.501109e-06, -7.512177e-08,  0.003765416;  
      -0.00026168, -0.00536107,      1 ]
```

I was not familiar earlier much with stereo-vision at first. So, I used the following resources, to first understand the concepts and then implemented it by referring to the openCV documentation only from time to time:

- 1) <https://www.youtube.com/watch?v=K-j704F6F7Q>
- 2) http://docs.opencv.org/modules/calib3d/doc/camera_calibration_and_3d_reconstruction.html
- 3) http://www.vision.caltech.edu/bouguetj/calib_doc/htmls/example5.html (for some more proper testing database)

Note:

For the database you have provided me, when I applied my algorithm to the pairs separately, i.e. finding fundamental matrix for each pair, I sometimes got much different values of F. But when I applied the same algorithm to separately to the pairs in the other database that I have included in the folder (“**stereo_example**”), I got almost the same value for each pair.