Q-2

Date: ....

A non-zero matrix F is fundamental matrix corresponding to a pair of camera matrices P & Q if & only if $Q^T F P$ is skew symmetric.

The above statement is true.

Proof :

For matrix to be skew-symmetric, it should satisfy the condition

$-A = A^T$ i.e. $\{a_{ij} = -a_{ji}\}$

For fundamdal matrix, following condition is always satisfied.

$$x'^T F x = 0$$

where x' & x are corresponding points.

[ ]

The condition that $Q^T F P$ is skew-symmetric is equivalent to

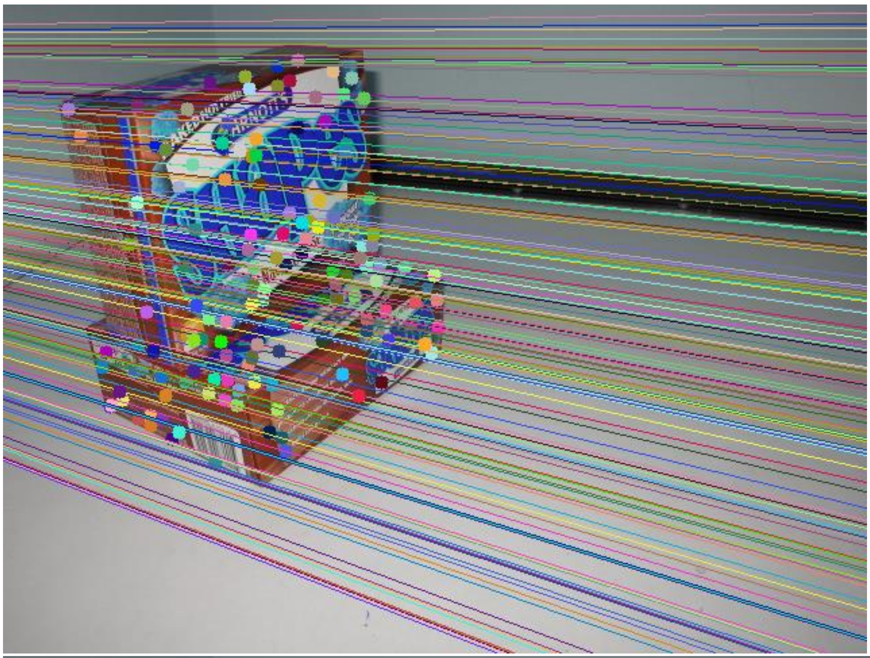
$$X^T Q^T F P X = 0 \text{ for all } X.$$

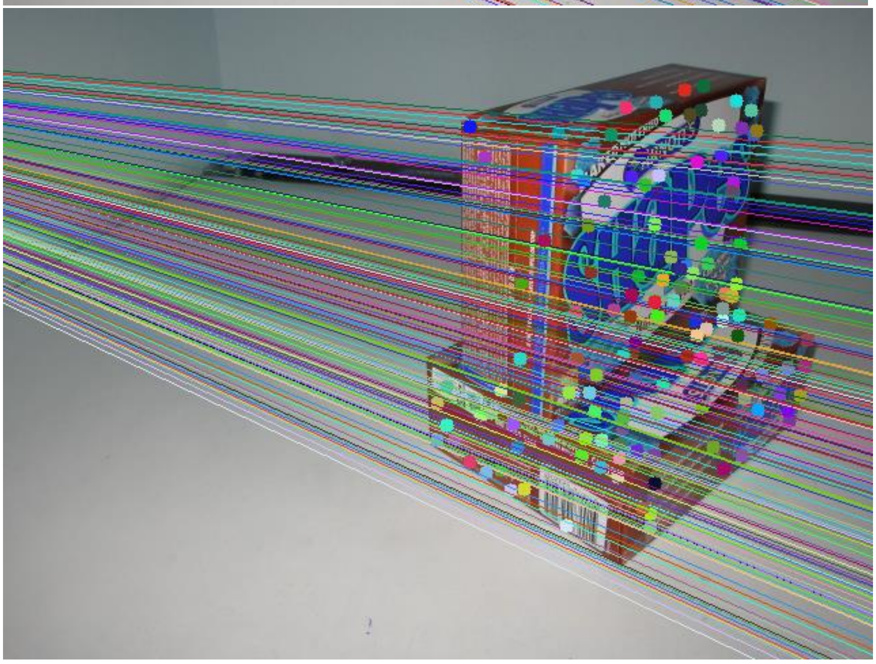
Letting $x' = QX$ & $x = PX$, is equivalent to $x'^T F x = 0$, which is defining equation for fundamental matrix.

Question1.

```
F = array([[  5.66273998e-07,   1.11471297e-05,   1.88345714e-04],
       [ -9.08797916e-06,   8.54051030e-07,  -7.35518978e-03],
       [  3.42708318e-04,   4.82238229e-03,   1.60356357e-01]])
```

Images





Using RANSAC

Matrix =

```
array([[  1.10265562e-06,   2.76924500e-05,  -3.04593721e-03],
       [ -2.26323779e-05,   3.32186504e-06,  -8.94697303e-03],
       [  2.86386807e-03,   6.36736274e-04,   1.00000000e+00]])
```