

Find Bright pixel as feature point

```
# determine is laser pixel
def isLaserPixelFromRGB(pixelRGB):
    sum = float(pixelRGB[0])+float(pixelRGB[1])+float(pixelRGB[2])
    return sum > 100
```



Left features mark as blue pixel

Right features mark as green pixel

Match feature points set by fundamental matrix error

Go through all right features to find a pixel with minimum error for a left feature, and iterate all left features to get matched pixel.

$$\mathbf{x}'^T \mathbf{F} \mathbf{x}$$



Features match result

Final Reconstrcut result

Use **Direct Triangulation Method** find 3d point and save in .xyz format

$$\begin{cases} (v' \mathbf{p}'_3{}^T - \mathbf{p}'_2{}^T) \mathbf{X} = 0 \\ (u' \mathbf{p}'_3{}^T - \mathbf{p}'_1{}^T) \mathbf{X} = 0 \end{cases}$$

