

# ELEC 474

## Machine Vision

### Lab 5

### Epipolar Lines

Tuesday November 5<sup>th</sup>, 2019

Find the Fundamental Matrix between a stereovision image pair.

Print out the elements of the matrix on the console.

Select a series of points (by mouse click) in one image, and display the corresponding epipolar lines in the other image.

#### Marking Scheme:

Fundamental Matrix computation: 4 marks

Epipolar Line display: 3 marks

TOTAL: 7 marks

#### Notes:

1. To calculate the Fundamental Matrix, use OpenCV routine **findFundamentalMat**. The input to this routine are two corresponding point sets, one for each image.

2. For some variations of **findFundamentalMat** (e.g. those using **FM\_RANSAC**), the correspondences between the two input point sets don't have to all be correct, so long as there are at least 7 true positives. The greater the number of true positives in the corresponding point sets, the more likely the resulting Fundamental matrix will be correct and accurate. The results from Lab 4 can be used to determine these true positive correspondences point sets.

3. The routine **computeCorrespondEpilines** can be used to compute the epipolar line for an input point.

4. Use the routine **setMouseCallback** to process mouse click input.