CS 558, Spring 2018: Quiz 6

NAME:

Problem 1. Consider a 2D point $\mathbf{p} = (x, y)^\top$ that is first rotated by an angle θ degrees and then shifted by a vector (u, v) to obtain an updated point $\mathbf{p}' = (x', y')^\top$. Write the matrix equation representing this transformation

- using cartesian coordinates (i.e. 2-vectors as input and output):

- using homogeneous coordinates (i.e. 3-vectors as input and output)

Problem 2. Consider you have executed an edge detector on an image to obtain a set of pixel locations with high edge response, and now want to fit a 2D line model to the data through RANSAC. Answer the following:

- What is the parametric model you need to utilize?

- If you only consider the pixels position, what is the size of minimal sample set?

- If you consider the pixels position AND the gradient direction at that position, what is the size of minimal sample set?