



# ENGO 559 – Digital Imaging

## Project Proposal – Image Segmentation

Course instructor:

Hani Mohammed

Group Members:

Hojo Duurenbileg (10172601)

Jeffery Thompson (30021871)

Sebastian McGonigle (30029677)

## **Introduction**

Image processing can be used in a multitude of applications ranging from auto-detecting text to artificial intelligence. This project will focus on the development of an algorithm for image segmentation. Once the data in an image is classified into objects, it can be useful for extracting information digitally.

## **Project Summary**

The purpose of our image segmentation algorithm is to detect and classify the differences between objects in an image. The input is one or multiple images, the output would be a file of resultant images, each one containing the digital information of a classified object. These output images could be compiled into one, where different colors would display to the viewer which objects have been classified.

Different edge detection algorithms will be investigated as well as isolating by the frequency. Edge detection can be carried out using a Hough transform and do a Canny Edge detection. This can be implemented to find traffic road lanes in an image. As well, images could be transformed into the frequency domain using FFT. In the frequency domain, a window can be completed to obtain the higher frequency information to obtain the texture and faster changing information in the image. The focus will be to use novel filtering techniques to segment different features in image.