INFSCI 2809: Spatial Data Analytics
Project 2
Due: February 21, 2019

The objective of this project is to learn how to use Quadrant Count methods for analyzing spatial point data patterns.

Obtain the OilGasLocationPA shapefile from "OilGasLocationPA.zip" file. Download the zip file from "http://gis40.exp.sis.pitt.edu/INFSCI2809_data" and use R/RStudio to perform two Quadrant Count methods. In the first method, take a regular quadrant sampling approach and in the second method take the random quadrant sample approach. For each approach create a table (as shown below) with these attributes: "No. of Events (K)"; "Number of Quadrants (X)"; "$K - \mu$"; "$(K - \mu)^2$"; "$X(K - \mu)^2$". Calculate the variance-mean ratio (VMR) and determine whether the data set is clustered, evenly scattered, or randomly scattered.

No. of Events (K)	Number of Quadrants (X)	$K - \mu$	$(K - \mu)^2$	$X(K - \mu)^2$

Submit:

A map of each Quadrant Count method with the original data points [10 points]
A table for each Quadrant Count method with the above statistics [10 points]
A summary report on the decision based on the VMR value in each Quadrant Count method [10 points]

Total points: 30

Submit the project items (map, table, report) as a single PDF file and R scripts (.R) on courseweb.