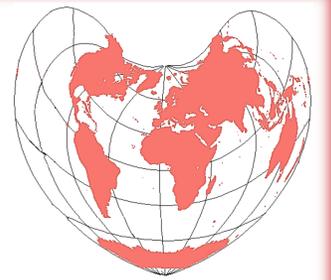


Love Fever on Twitter

Modeling Valentine's Day Geo-located Tweets Using Two and Three Dimensional Kernel Density Estimations

Ali AkbariMoghaddam

Professional Science Master in Geographic Information Sciences, Eastern Illinois University
March 2016



Whether we like it or not, these days social media is part and parcel of our everyday lives. Perhaps analyzing social media and in particular twitter would be a good way to reveal our cultural patterns and the way we interact with each other especially in global and regional events.

In this research I have used four different keywords, yet similar in meaning to obtain geo-located tweets from twitter using a python script written initially by Dr. Barry Kronenfeld and modified by me later on. The keywords used to stream the data were; Love, Valentine's day, Romantic and Romance. I ran the python script on Valentine's day in order to stream data in real time and as a result I compiled about 10500 geo-located tweets just for the United States alone and around 35k from all over the world.

I then used Kernel Density Estimation (KDE) to analyze the density. I have used bivariate normal KDE with different band widths to show the effect of choosing the right band width based on the data and the study area. I have tried to compare band width with the value of 3 (low) and band width with the value of 7 (high) in different scales.

I have conducted the entire analysis including graphs and charts in R - a free open source yet very powerful software - and I have written 900+ lines of scripts to do this research. Due to consistency purposes, Alaska, Hawaii, Puerto Rico and Virgin Islands are excluded. The regional delineation is based on USGS regional delineation 2016. The heart-shaped glob is using Bonne projection and has been created by me in R.

Ali AkbariMoghaddam
March 2016

#GISModeling#SpatialAnalysis#KDE#BandWidth#3D#Love#ValentinesDay#Romance#Romantic#cartography#USA#RegionalDelineation#FantasticLegends#HeatGraph#BarChart#BubbleChart#CategorizedMap#BonneProjection#35k#Tweets#Twitter#SocialMedia#R#Python#BigData#OpenSource#RealTimeDataStreaming#10KTweets#2016#EasternIllinoisUniversity#PSM#AliAkbariMoghaddam#LotsOfHashtags#LOL

