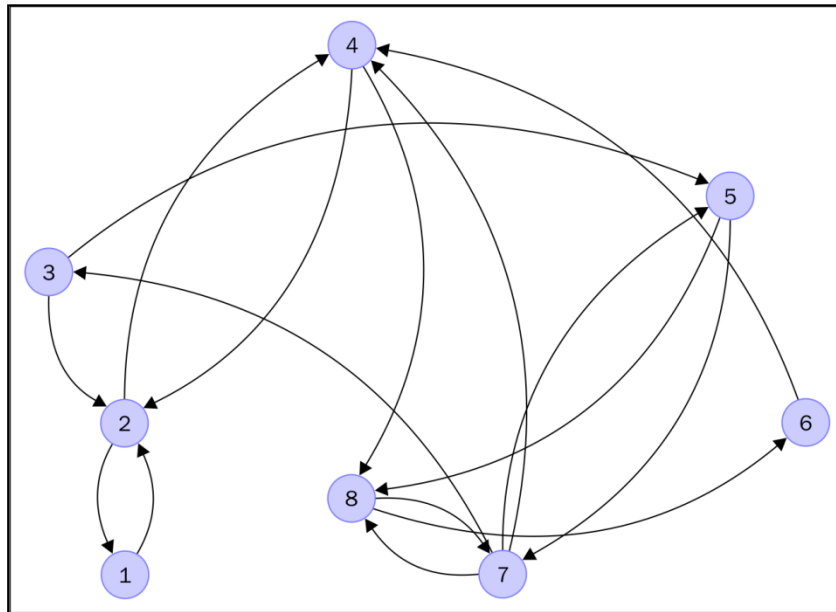
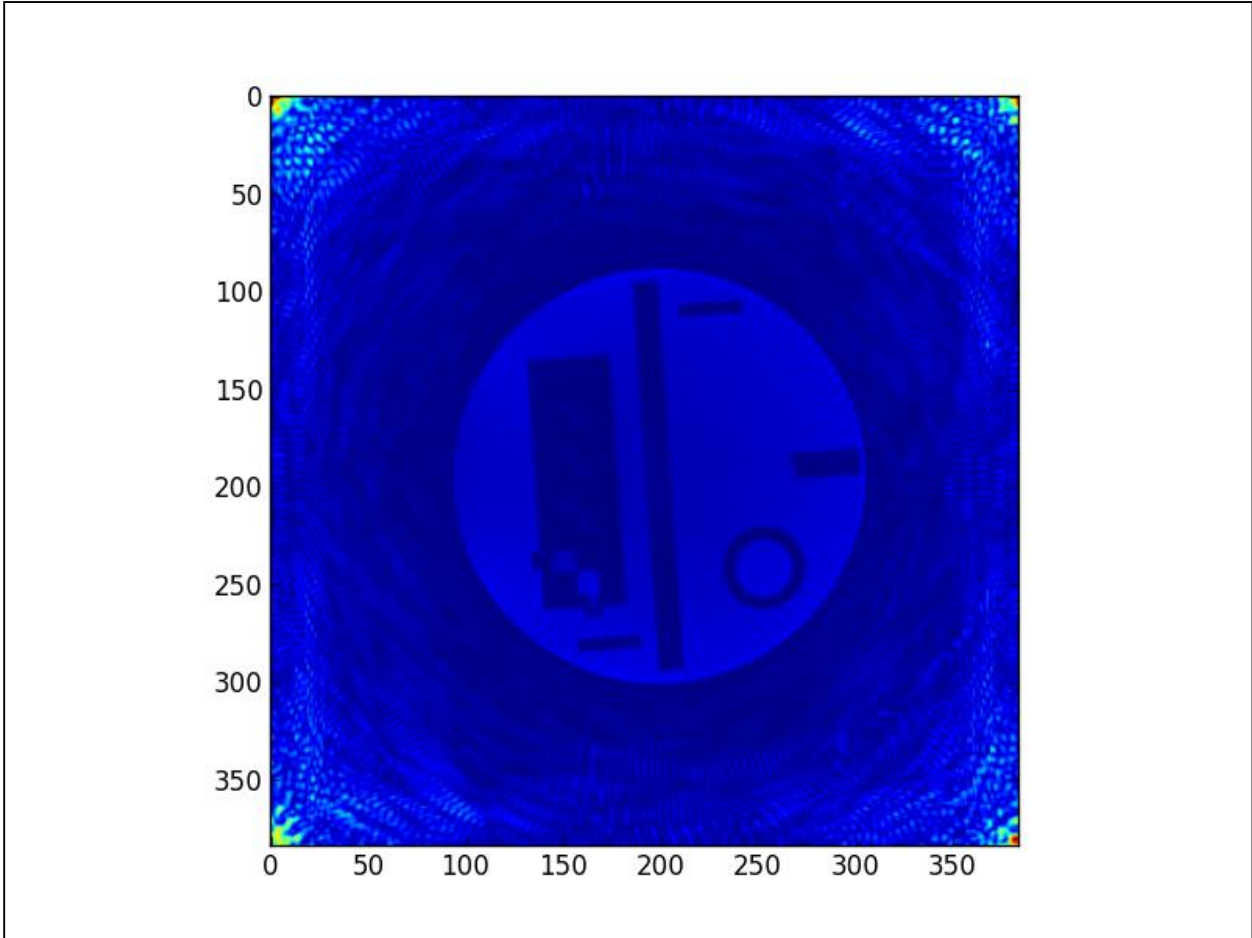
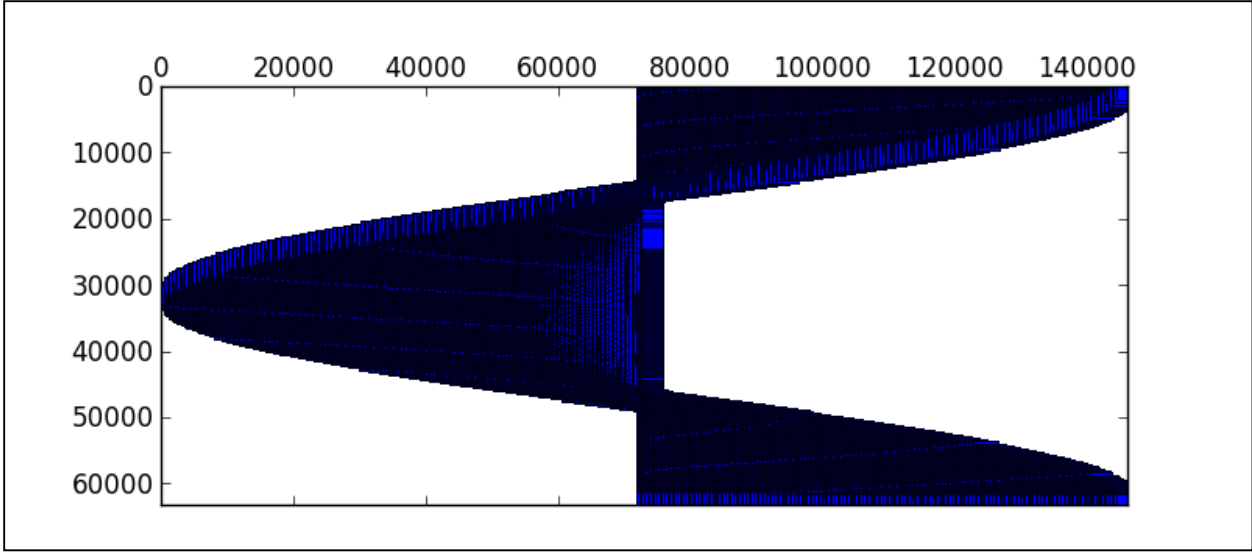
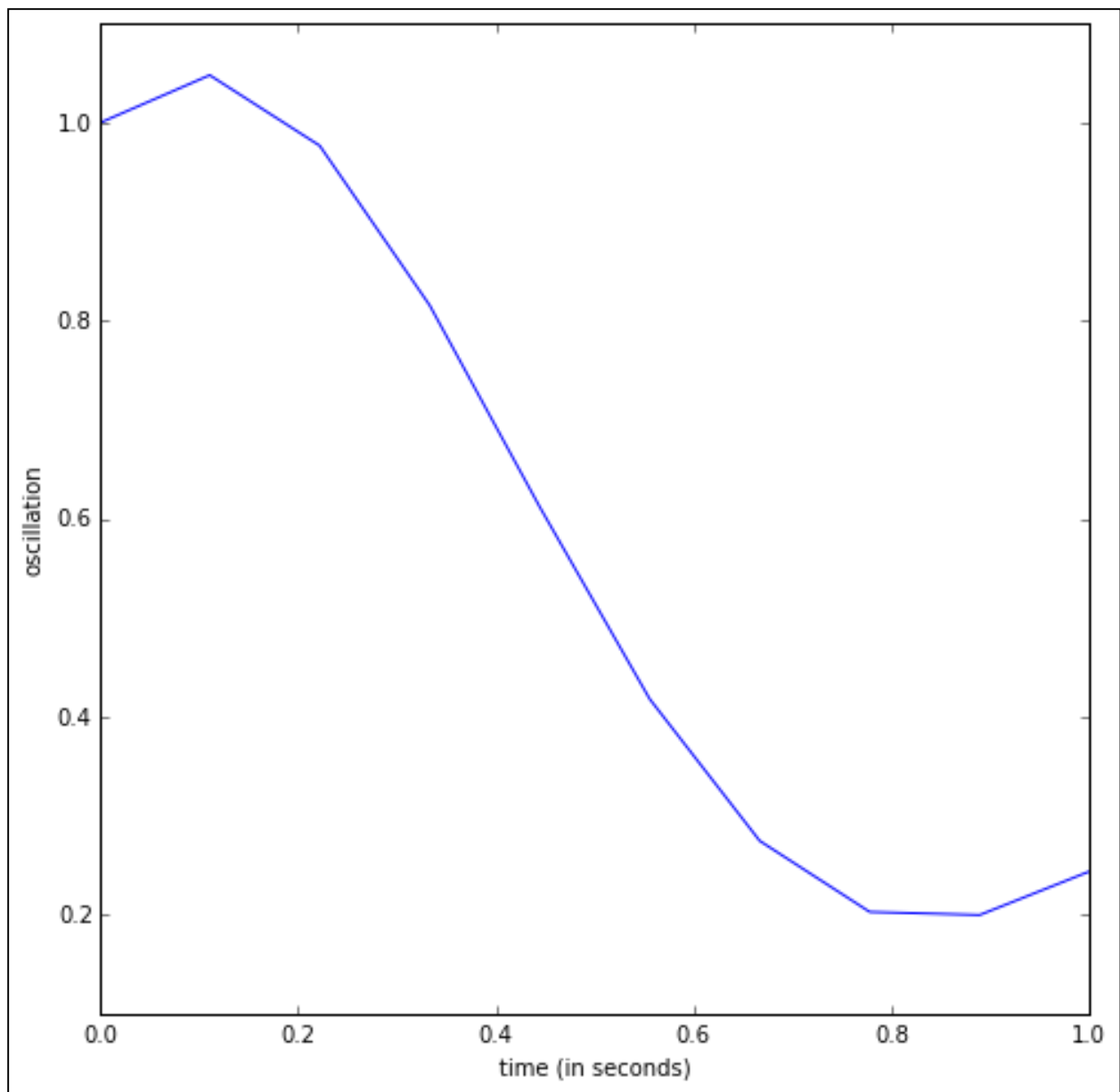


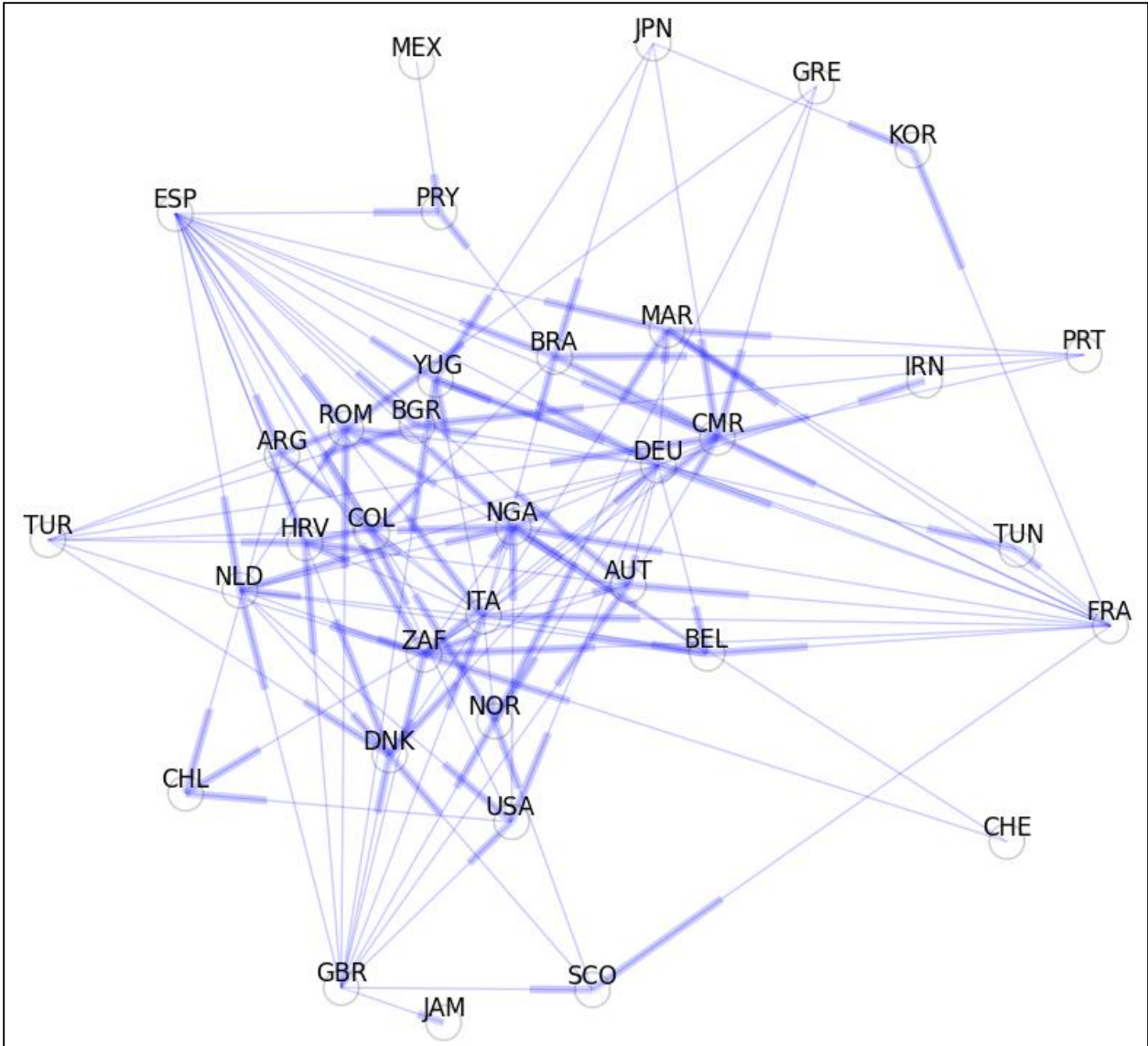
Chapter 1: Numerical Linear Algebra



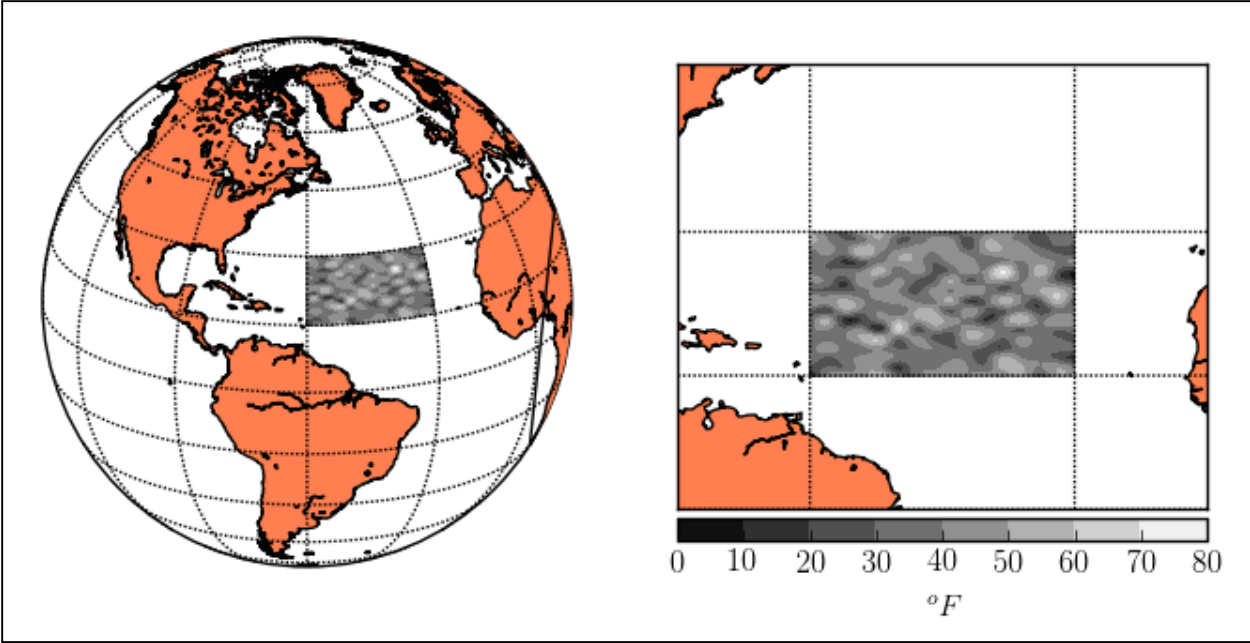
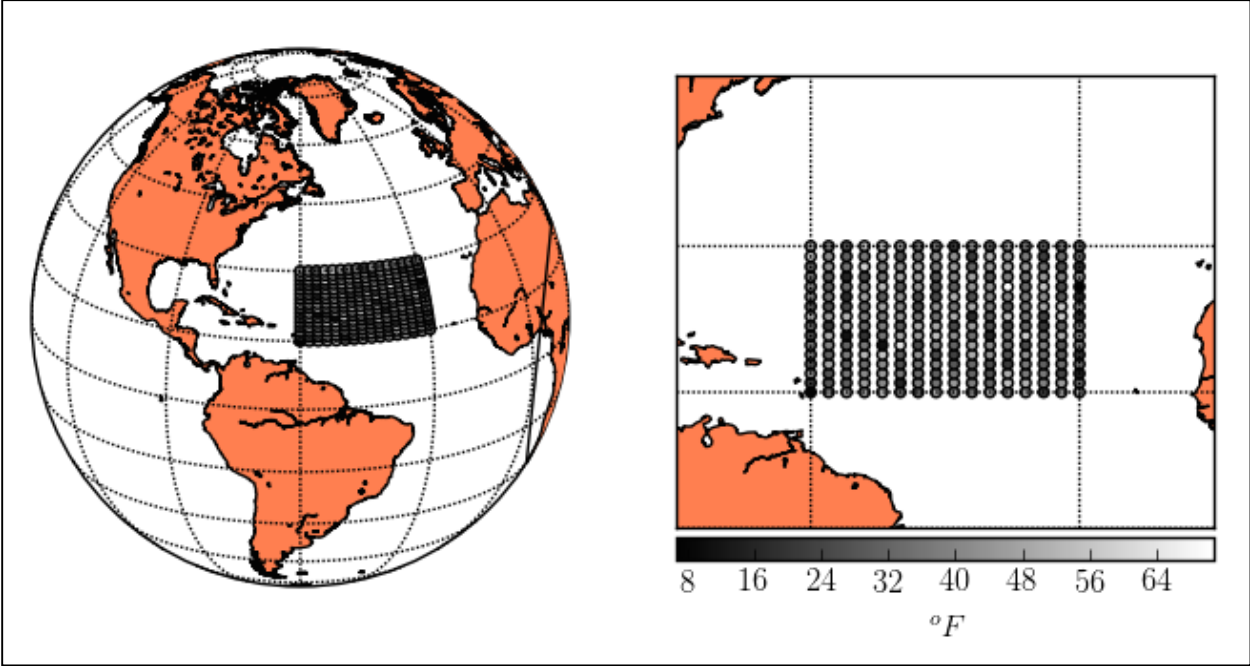
```
%% MatrixMarket matrix coordinate real general
%-----
% UF Sparse Matrix Collection, Tim Davis
% http://www.cise.ufl.edu/research/sparse/matrices/Bydder/mri2
% name: Bydder/mri2
% [MRI reconstruction (2), from Mark Bydder, UCSD]
% id: 1318
% date: 2005
% author: M. Bydder
% ed: T. Davis
% fields: title A name b id notes date author ed kind
% kind: computer graphics/vision problem
%-----
% notes:
% x=lsqr(A,b); imagesc(abs(fftshift(fft2(reshape(x,384,384)))));
%-----
63240 147456 569160
31992 1720 .053336731395584265
31992 1721 .15785917688901102
31992 1722 .07903055194318191
```

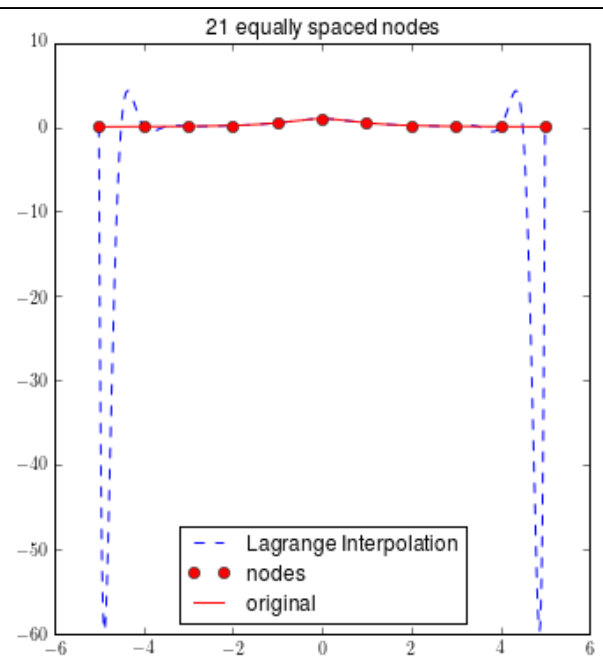
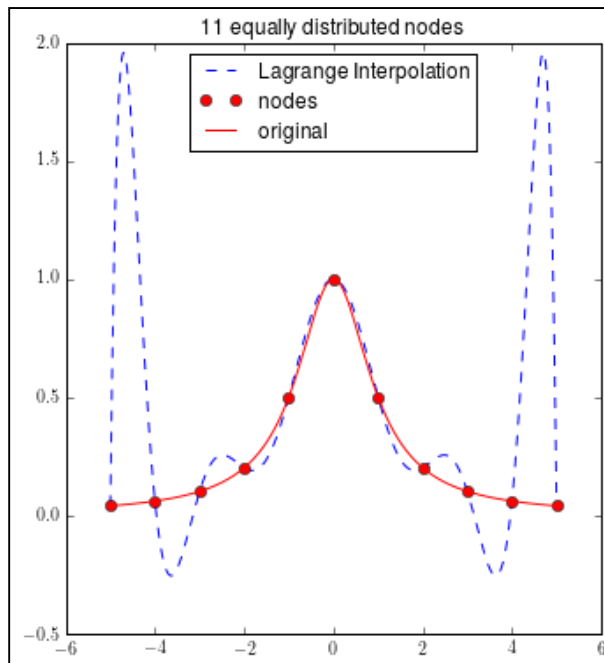
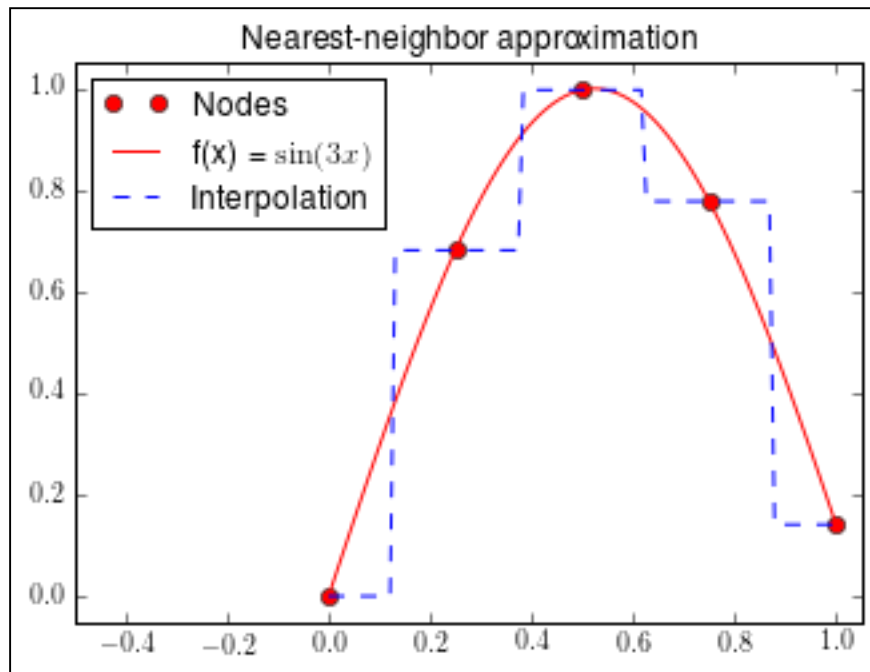


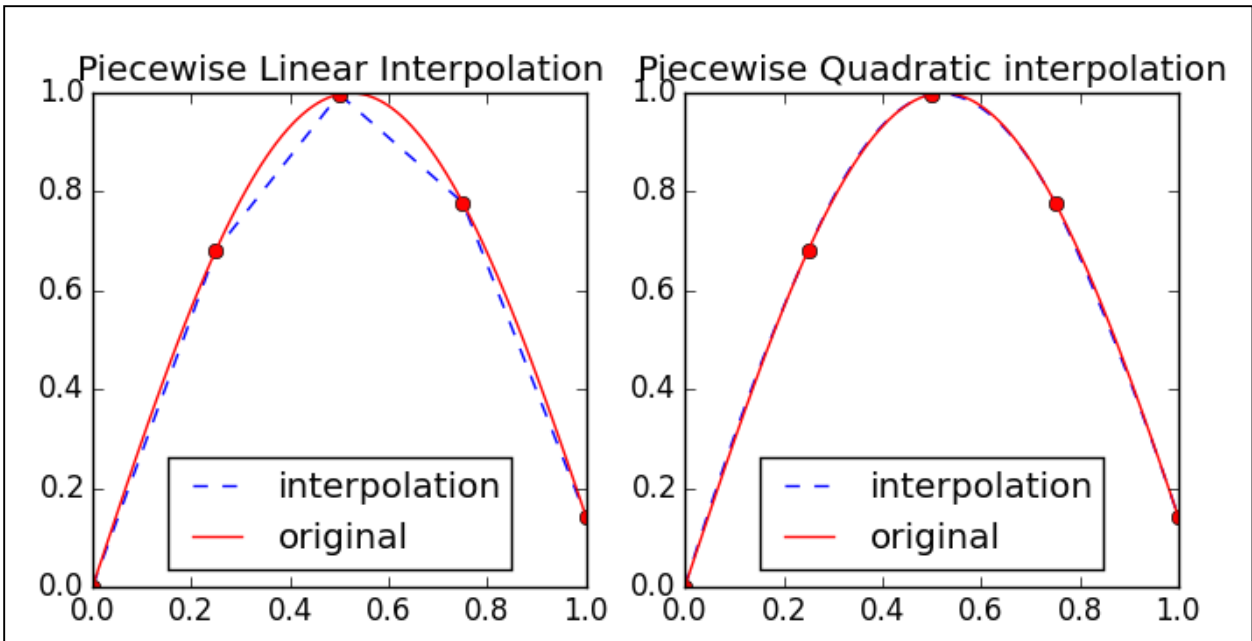
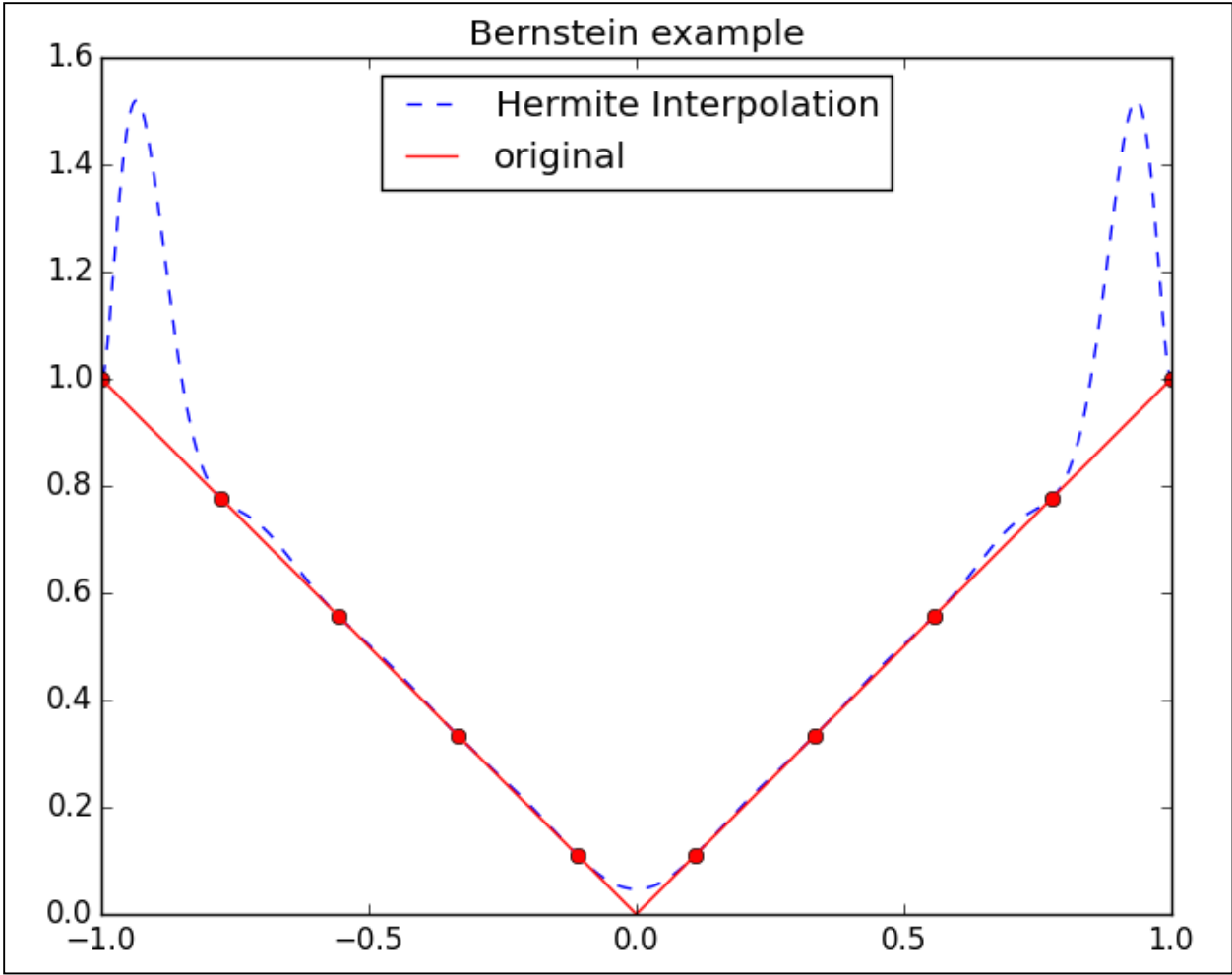


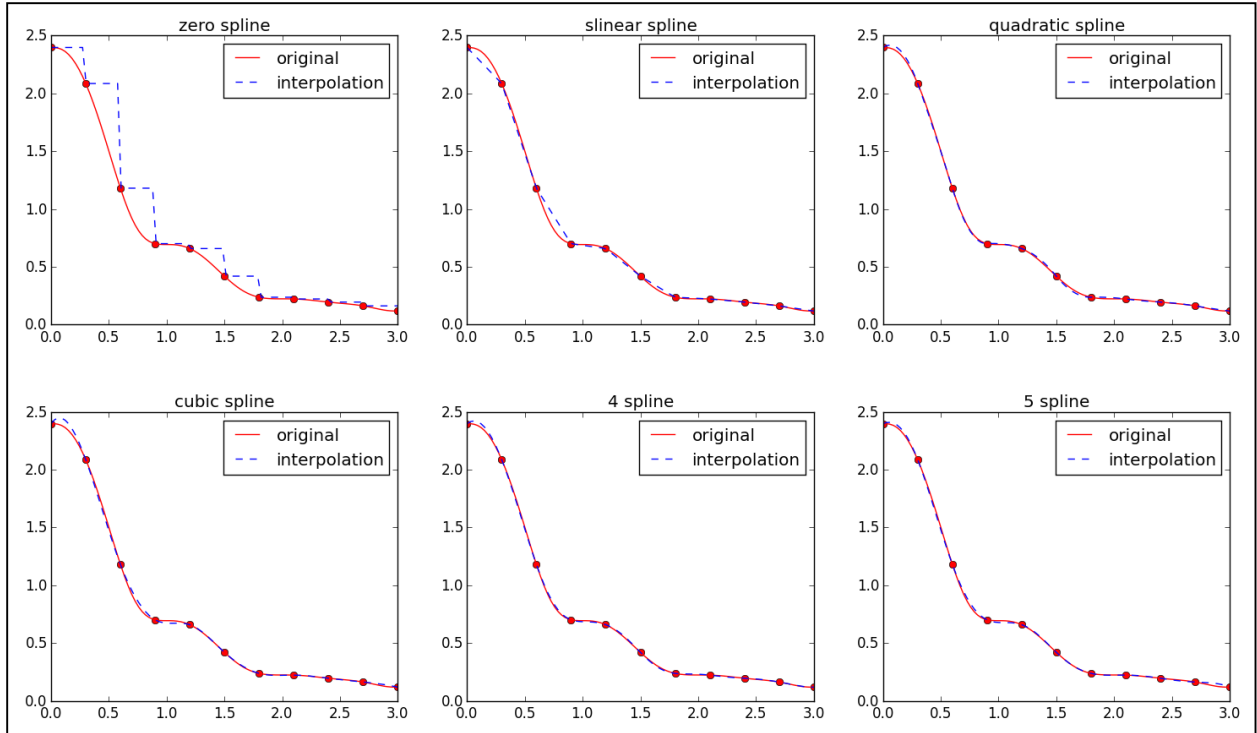


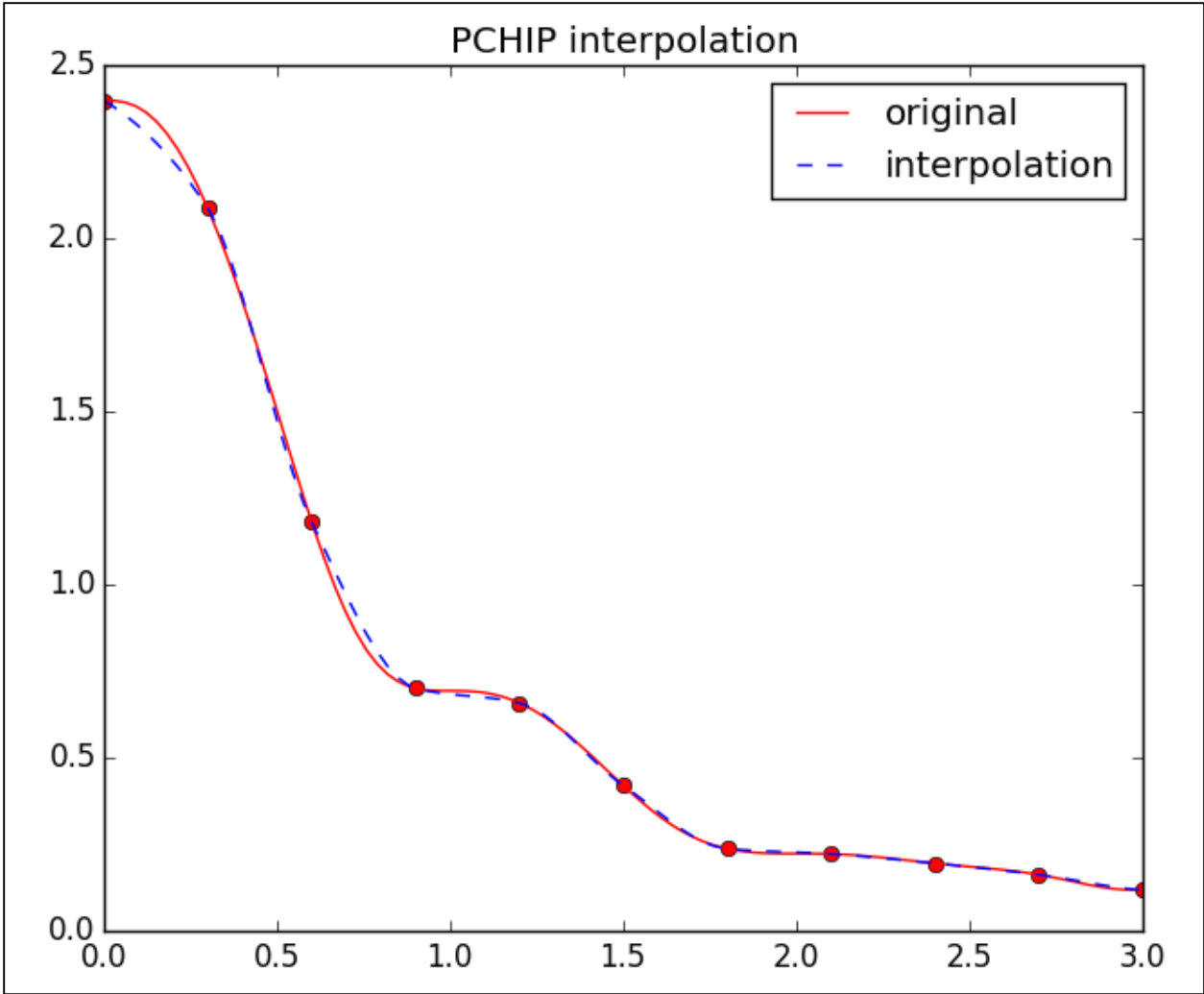
Chapter 2: Interpolation and Approximation

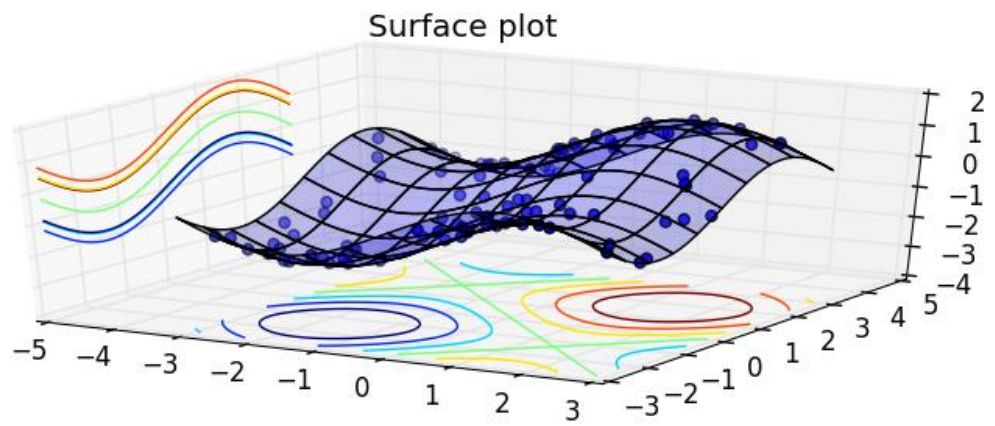
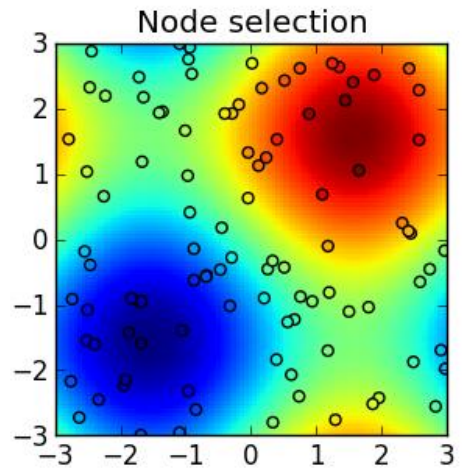
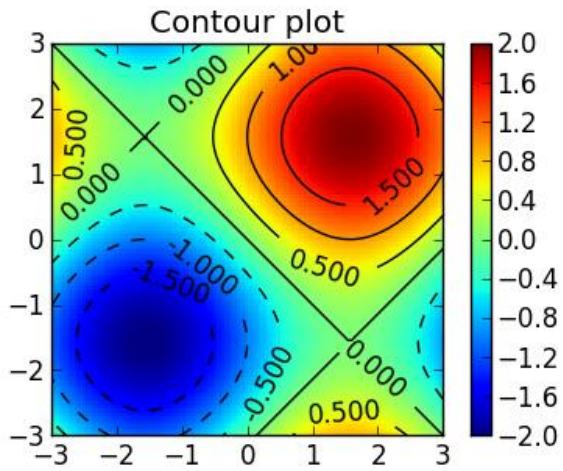




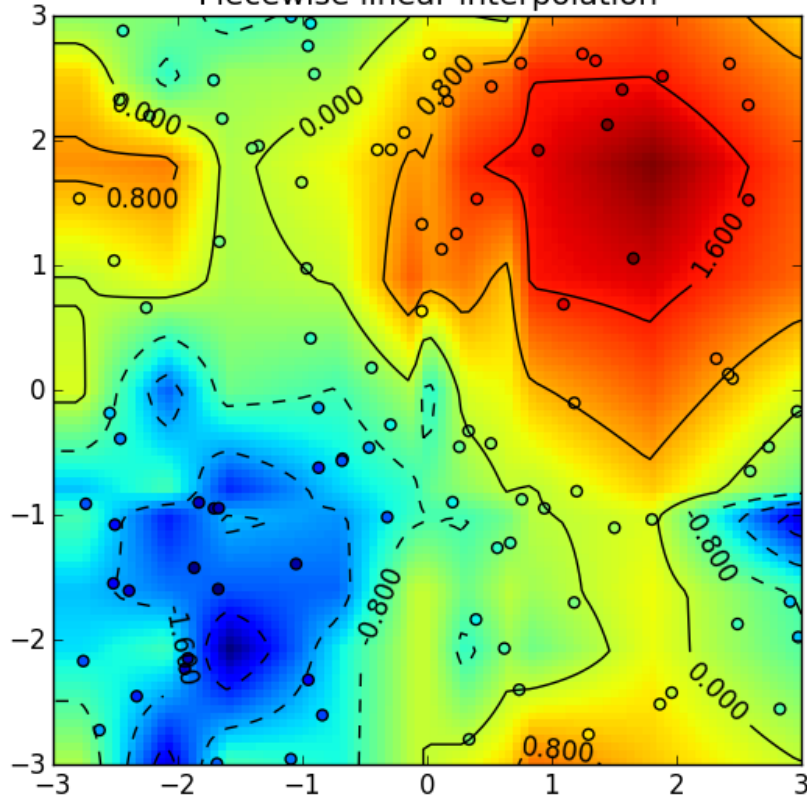




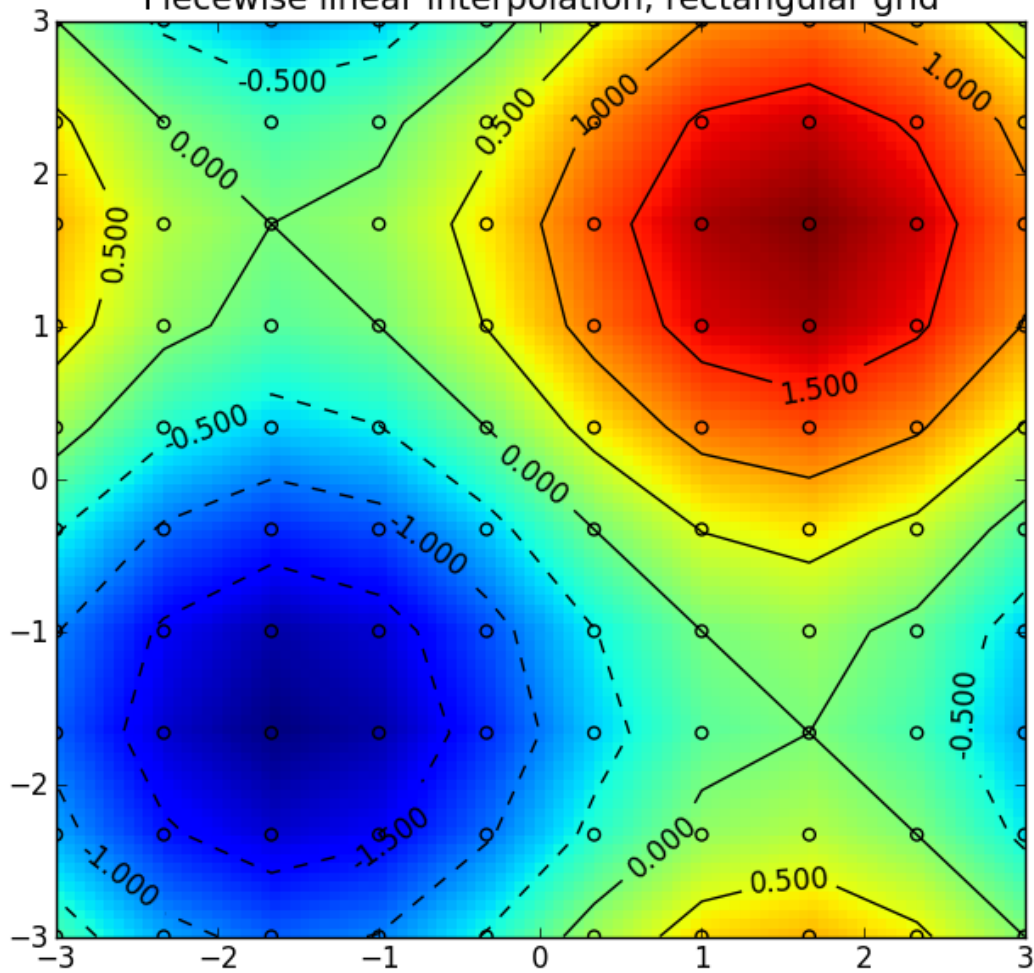




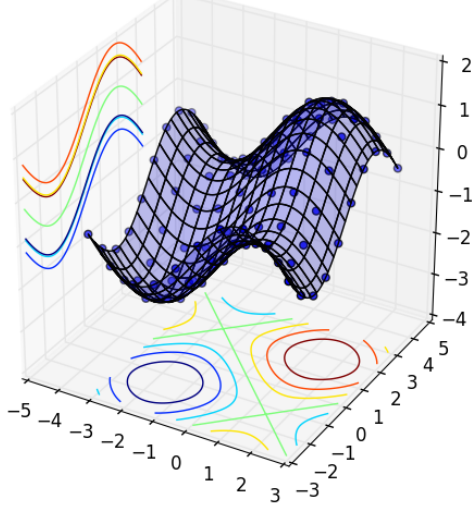
Piecewise linear interpolation



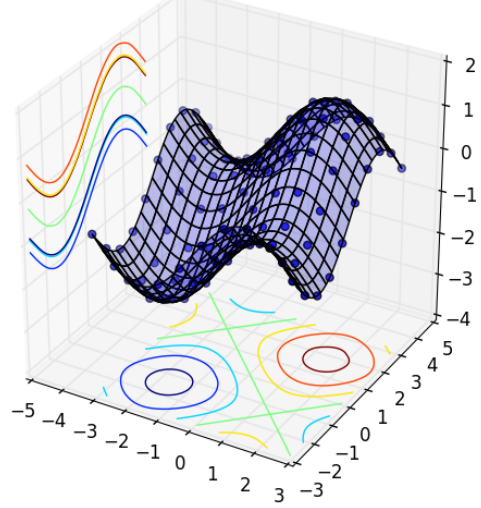
Piecewise linear interpolation, rectangular grid



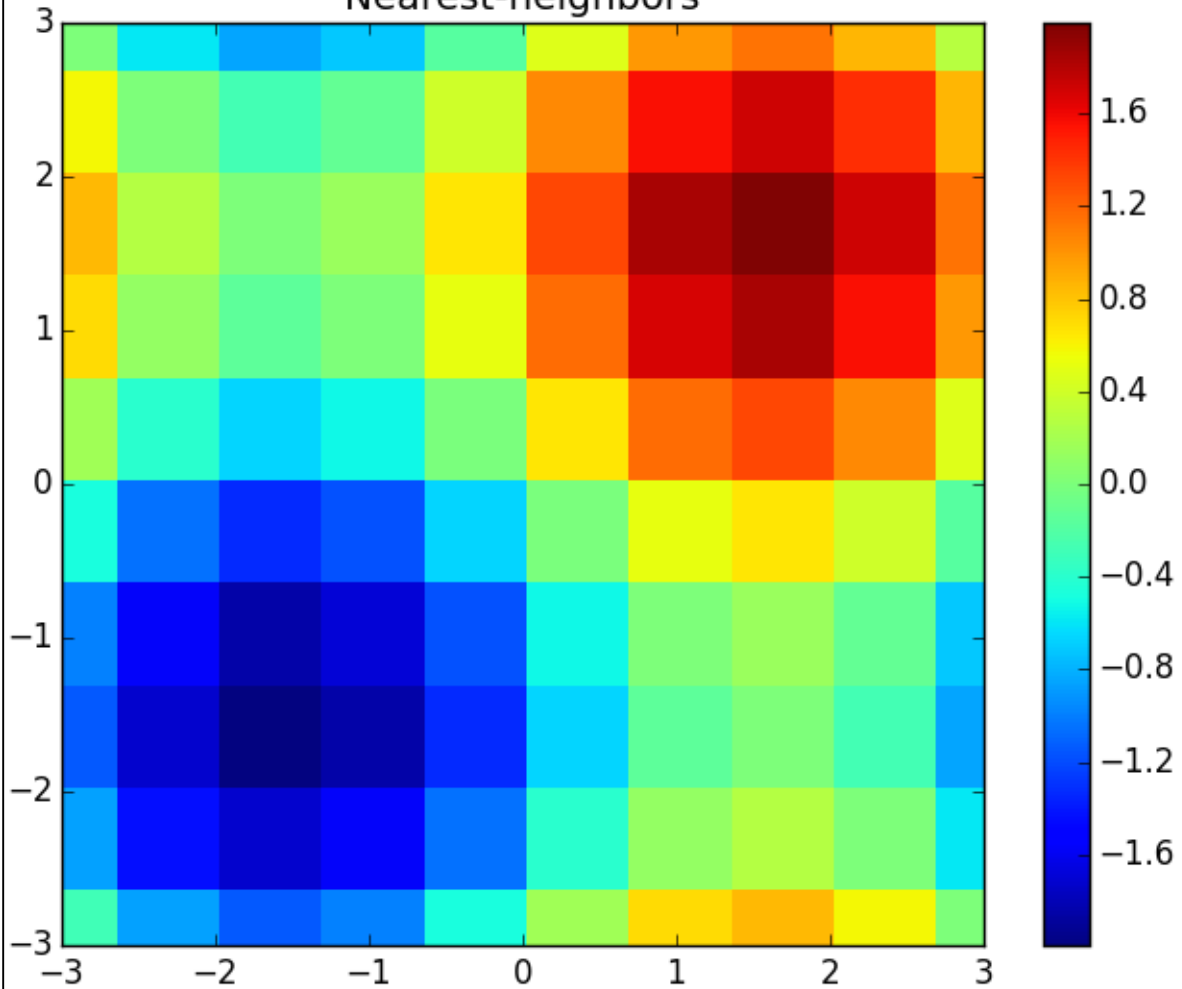
Cubic interpolation, RectBivariateSpline

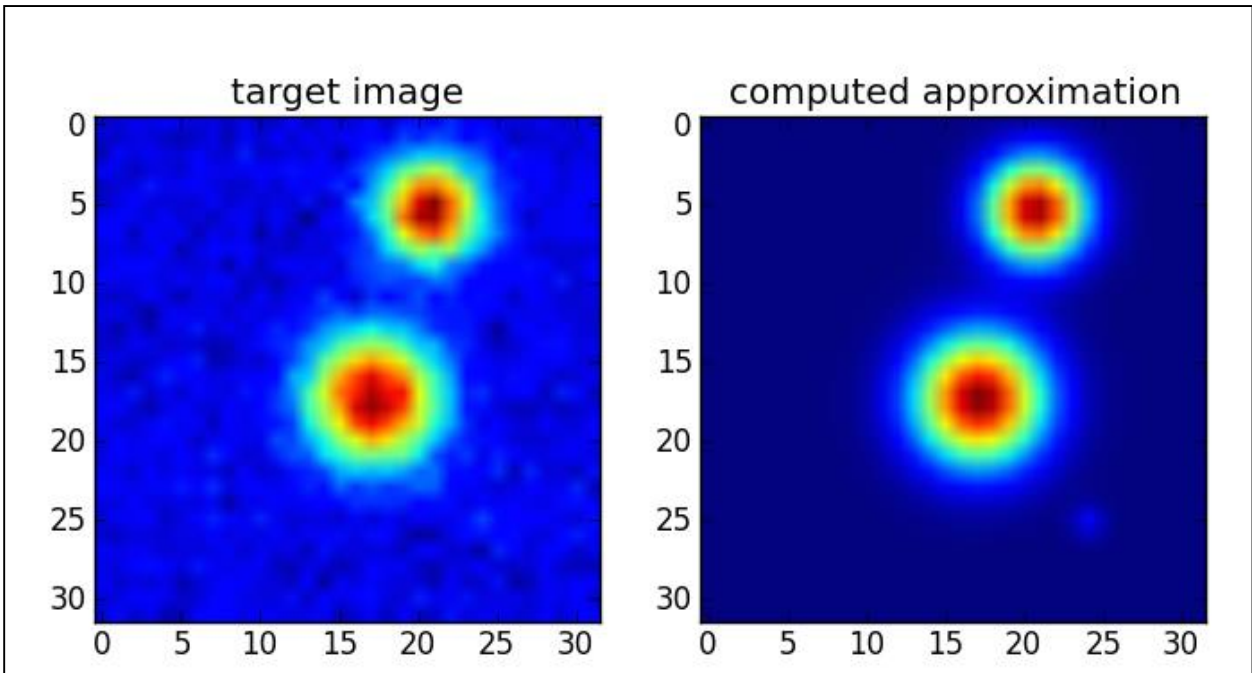
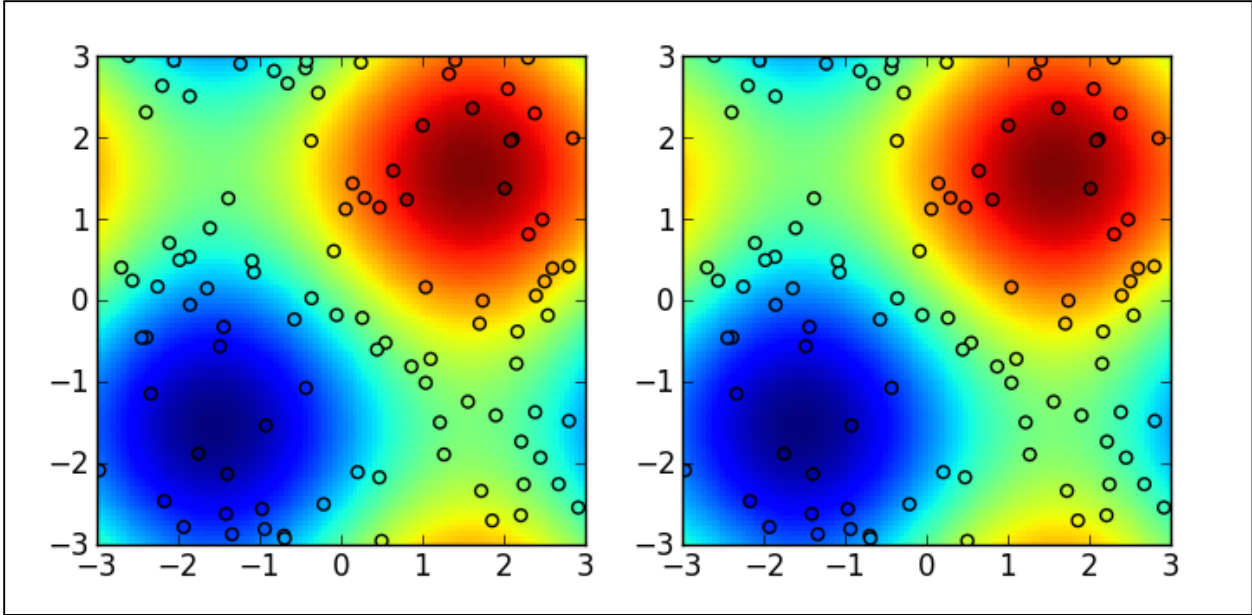


Cubic interpolation, CloughTocher2DInterpolator

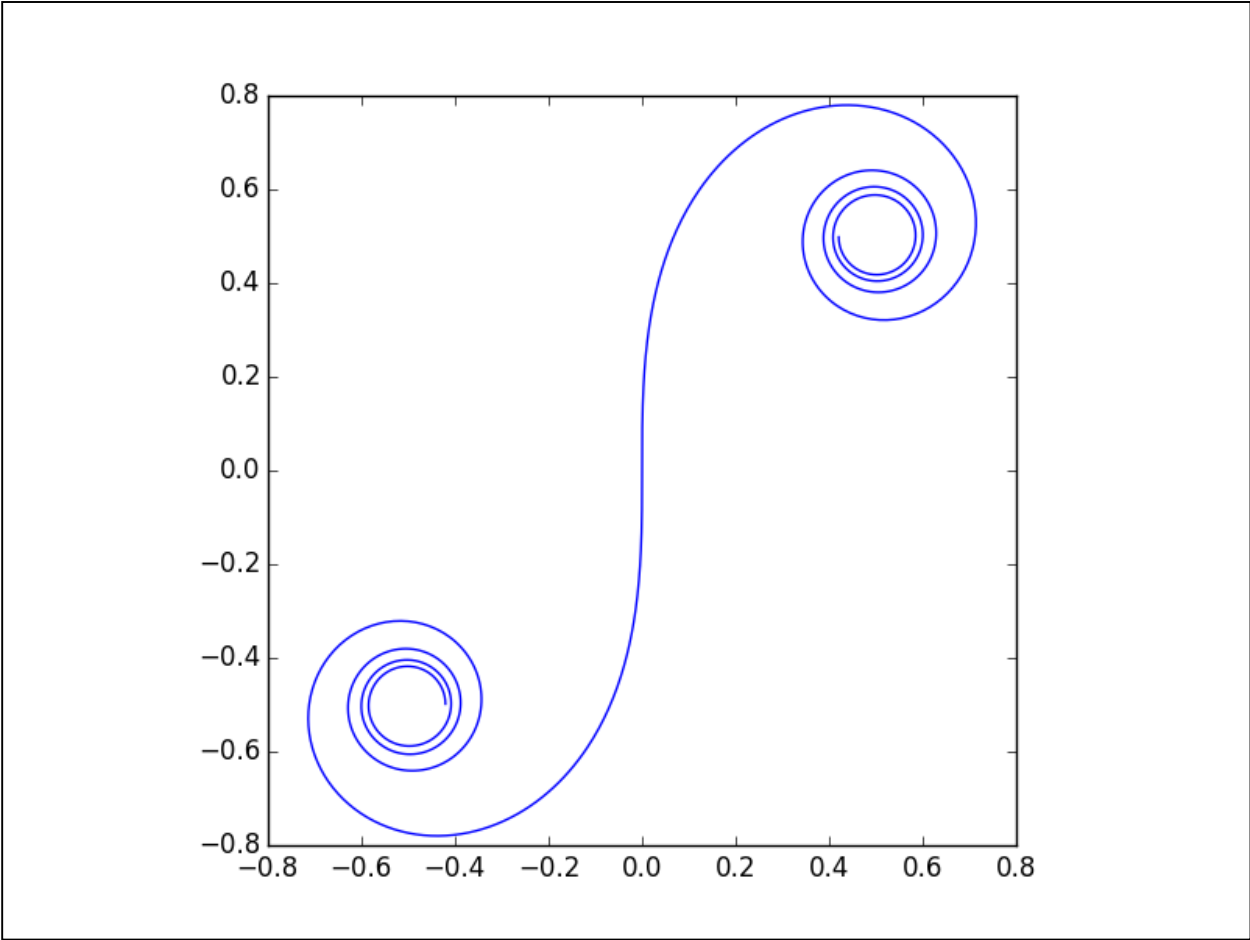


Nearest-neighbors

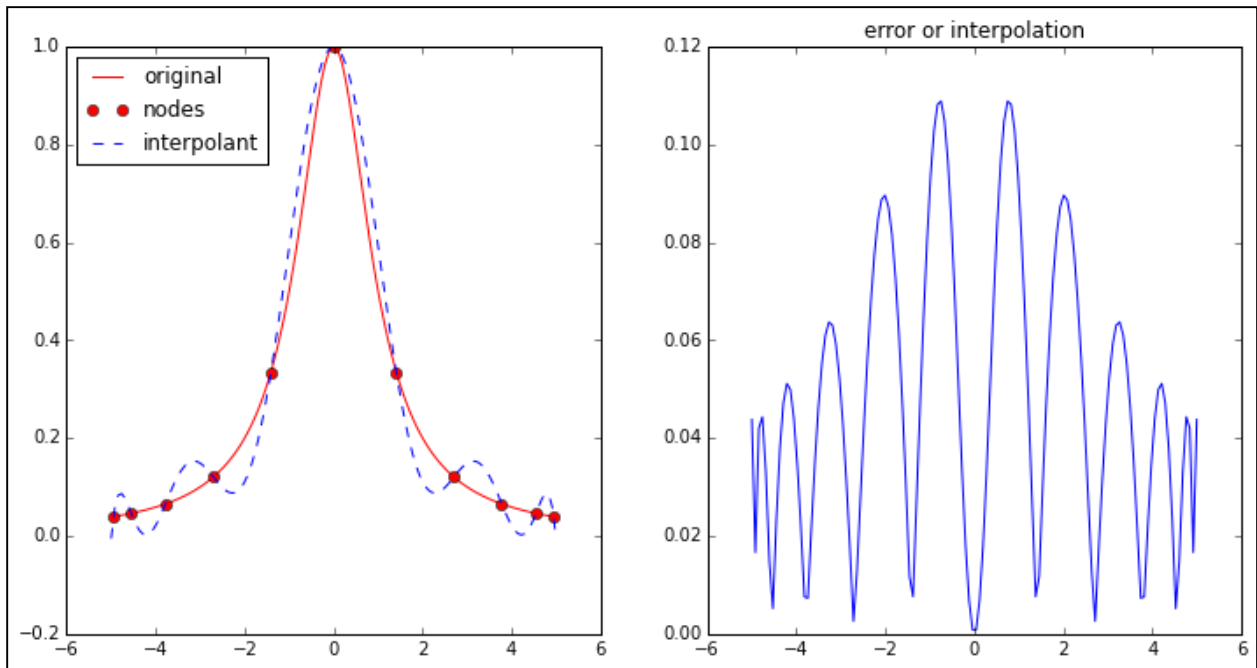
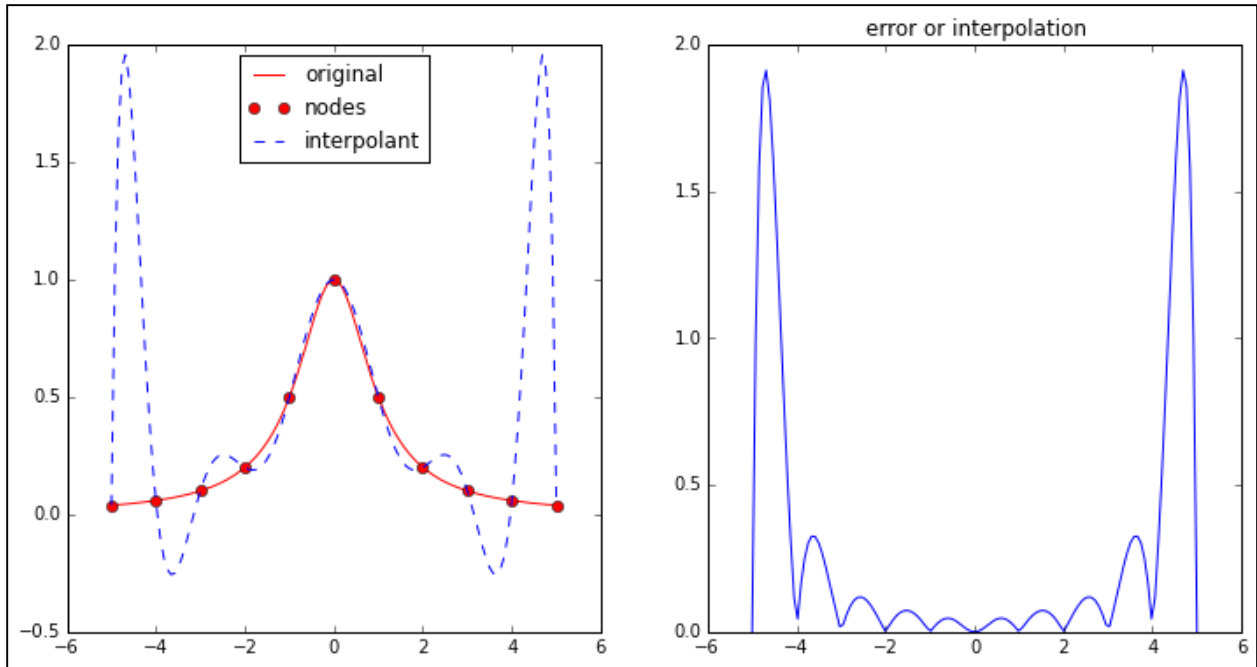




Chapter 3: Differentiation and Integration



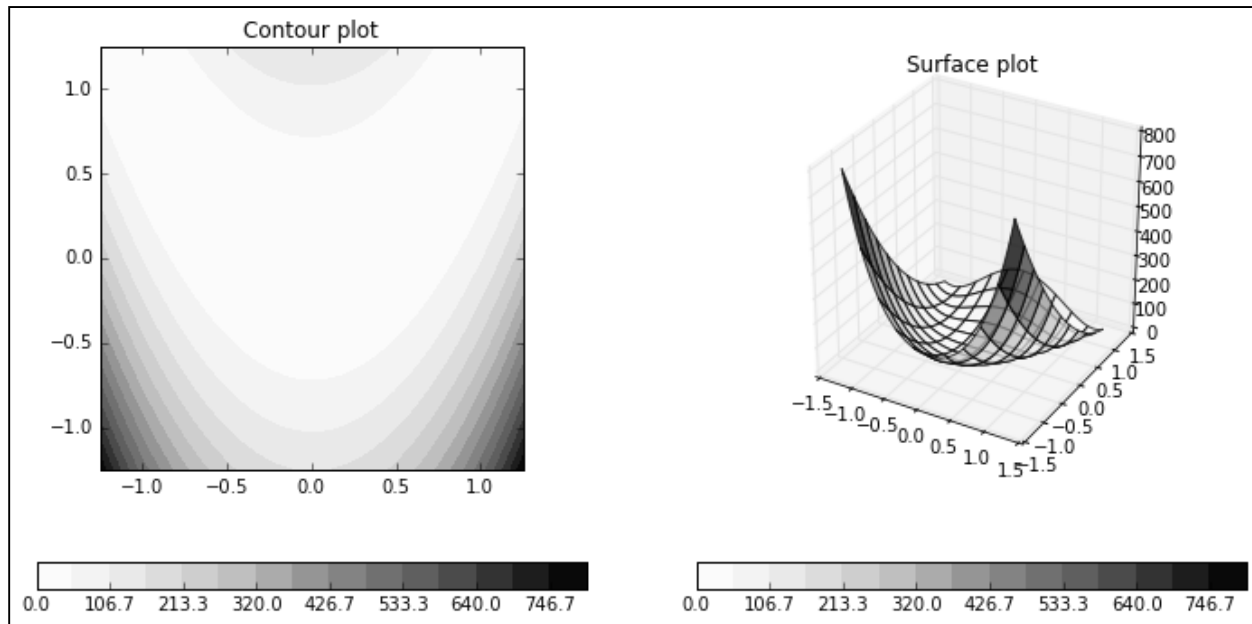
Chapter 4: Nonlinear Equations and Optimization



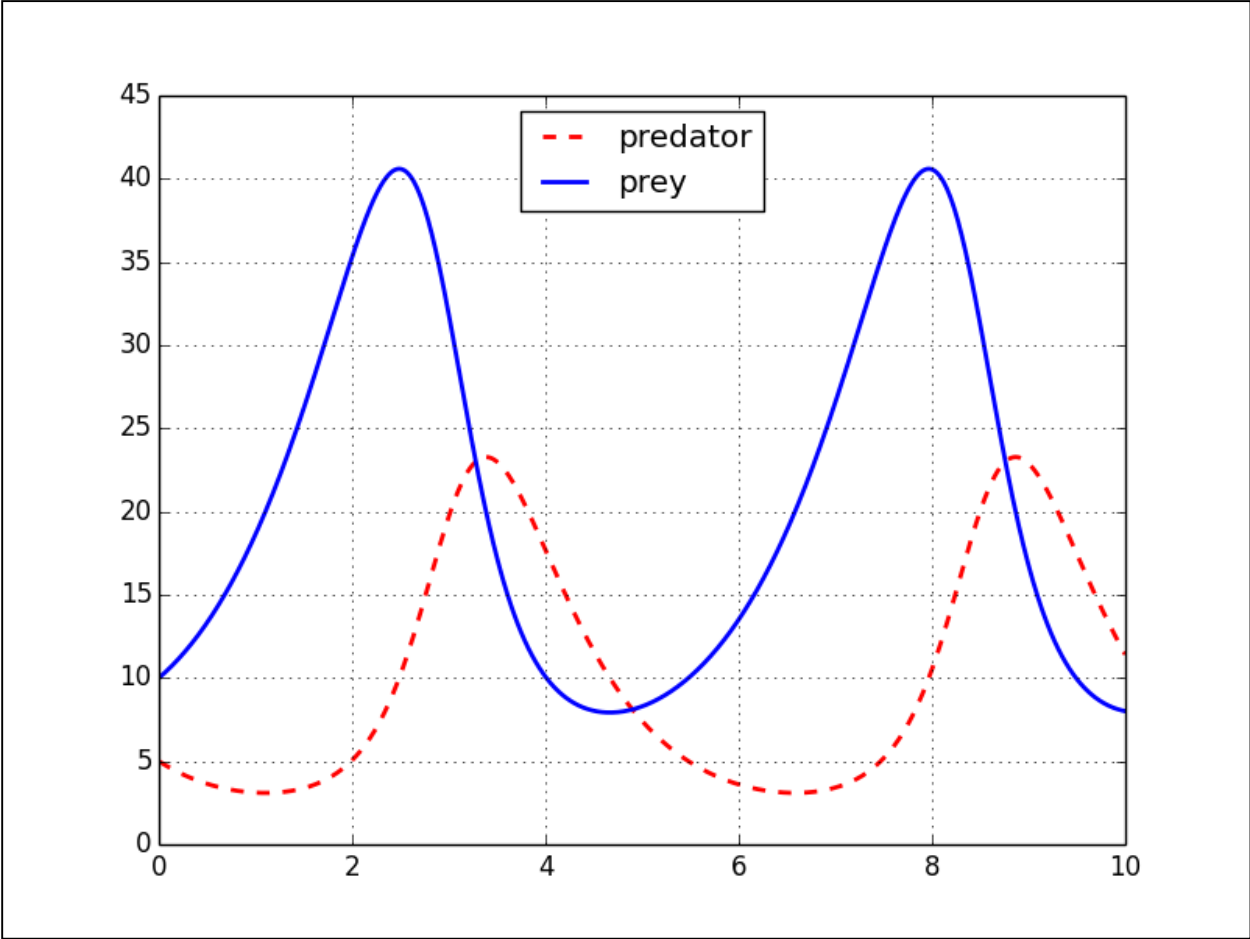
```

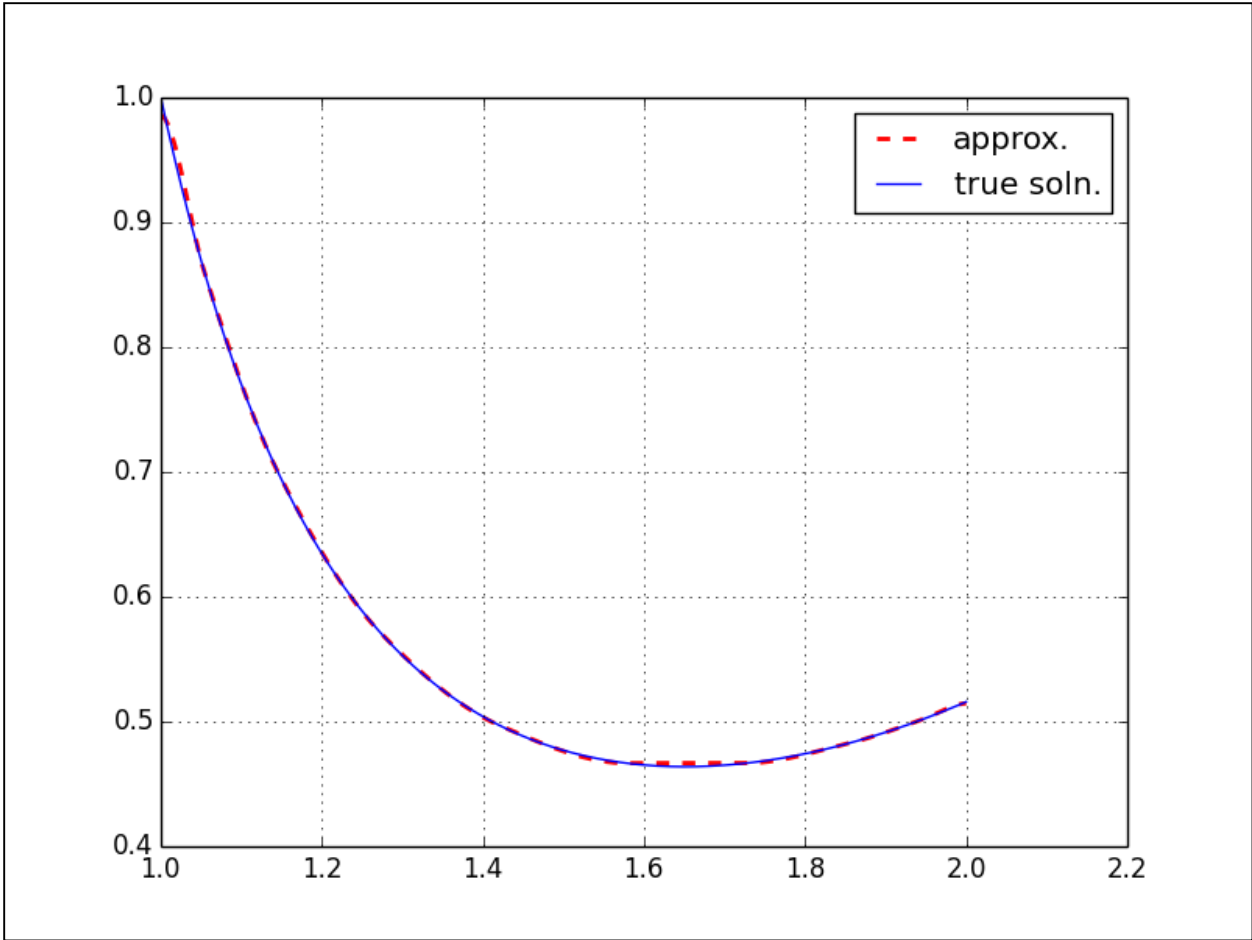
Matrix([
[-4*x0 + 3,      -2,      0,      0,      0,      0,      0,      0,      0,      0],
[-1, -4*x1 + 3,  -2,      0,      0,      0,      0,      0,      0,      0],
[0,      -1, -4*x2 + 3,  -2,      0,      0,      0,      0,      0,      0],
[0,      0,      -1, -4*x3 + 3,  -2,      0,      0,      0,      0,      0],
[0,      0,      0,      -1, -4*x4 + 3,  -2,      0,      0,      0,      0],
[0,      0,      0,      0,      -1, -4*x5 + 3,  -2,      0,      0,      0],
[0,      0,      0,      0,      0,      -1, -4*x6 + 3,  -2,      0,      0],
[0,      0,      0,      0,      0,      0,      -1, -4*x7 + 3,  -2,      0],
[0,      0,      0,      0,      0,      0,      0,      -1, -4*x8 + 3,  -2],
[0,      0,      0,      0,      0,      0,      0,      0,      -1, -4*x8 + 3]])

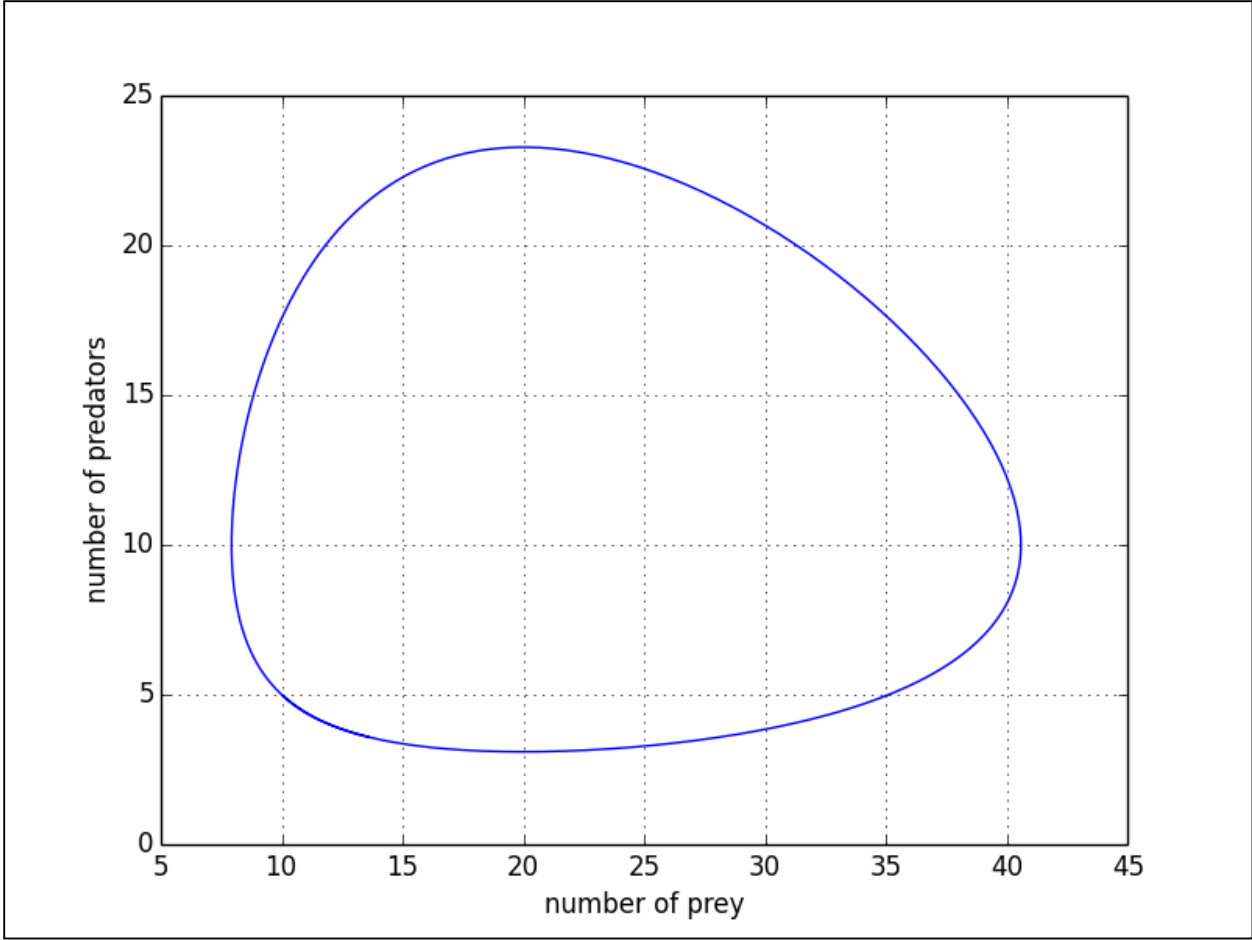
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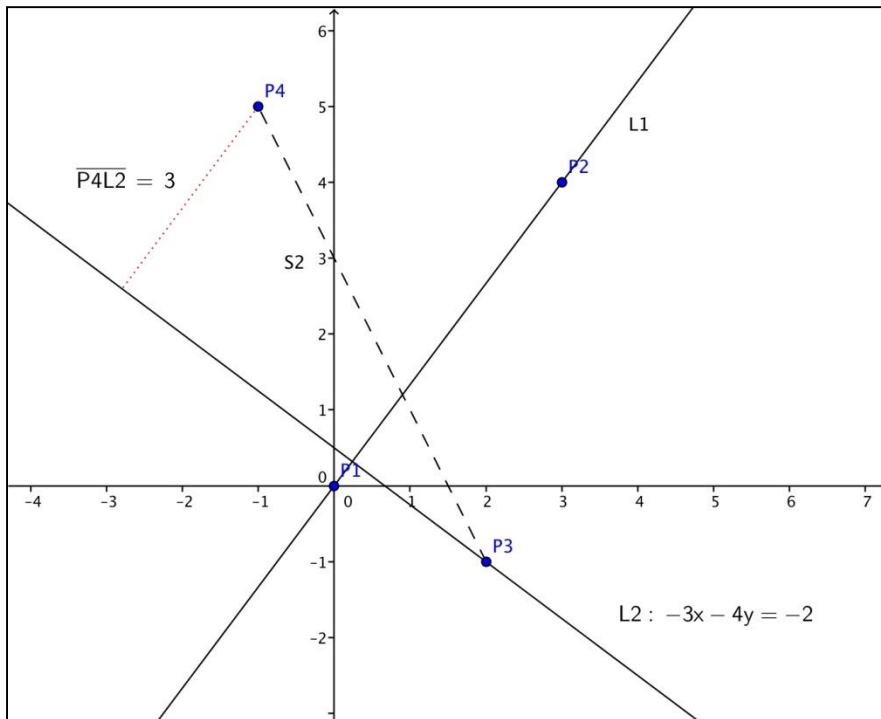
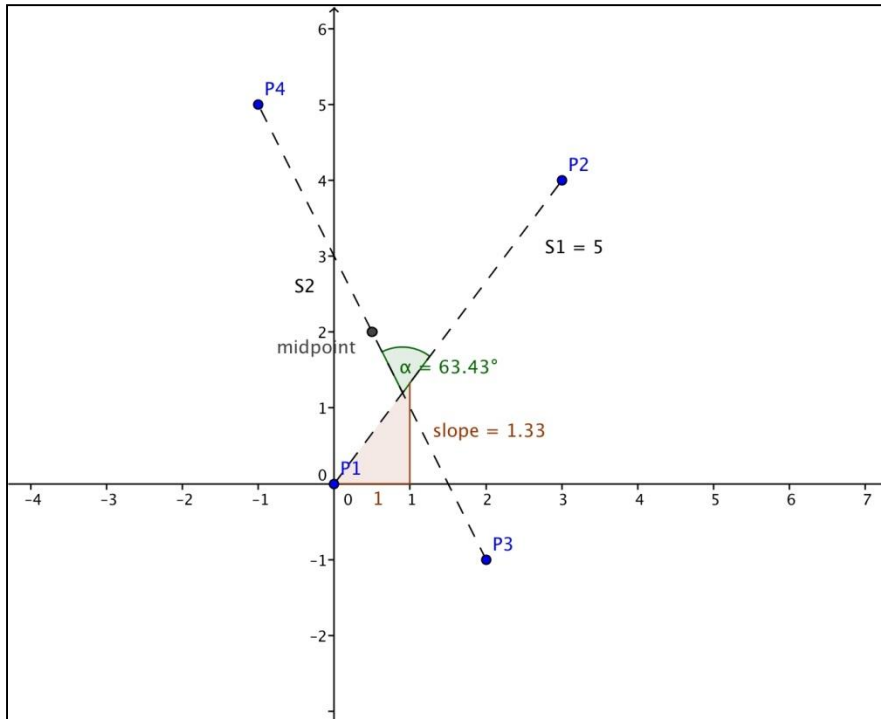
Chapter 5: Initial Value Problems for Ordinary Differential Equations

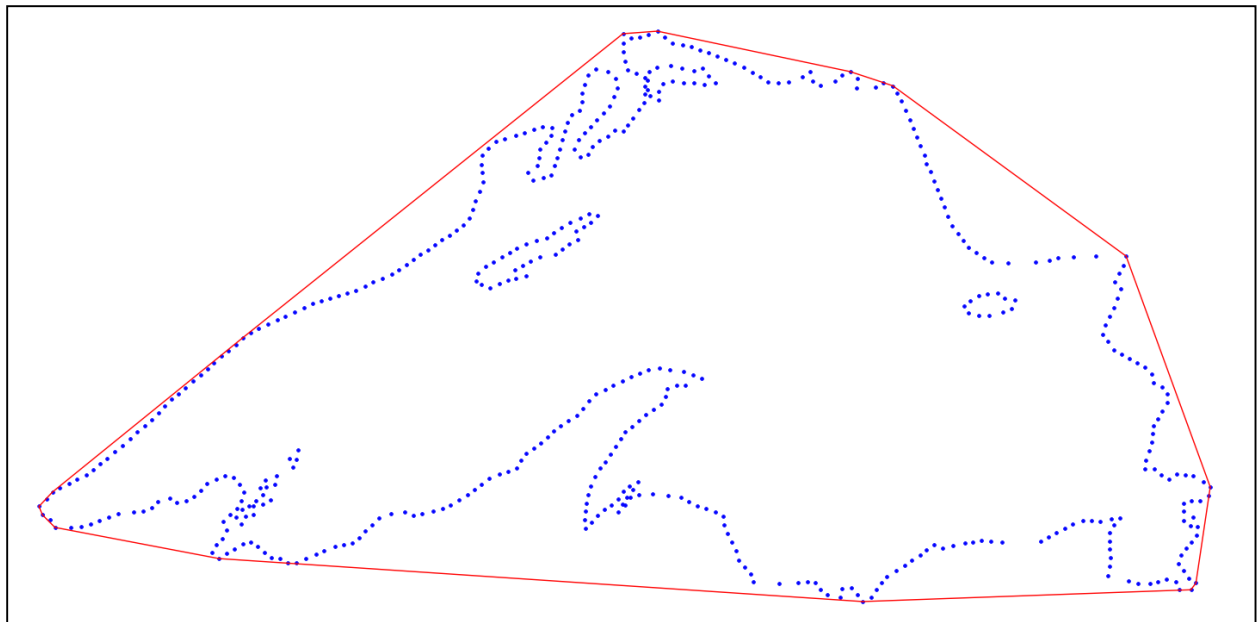
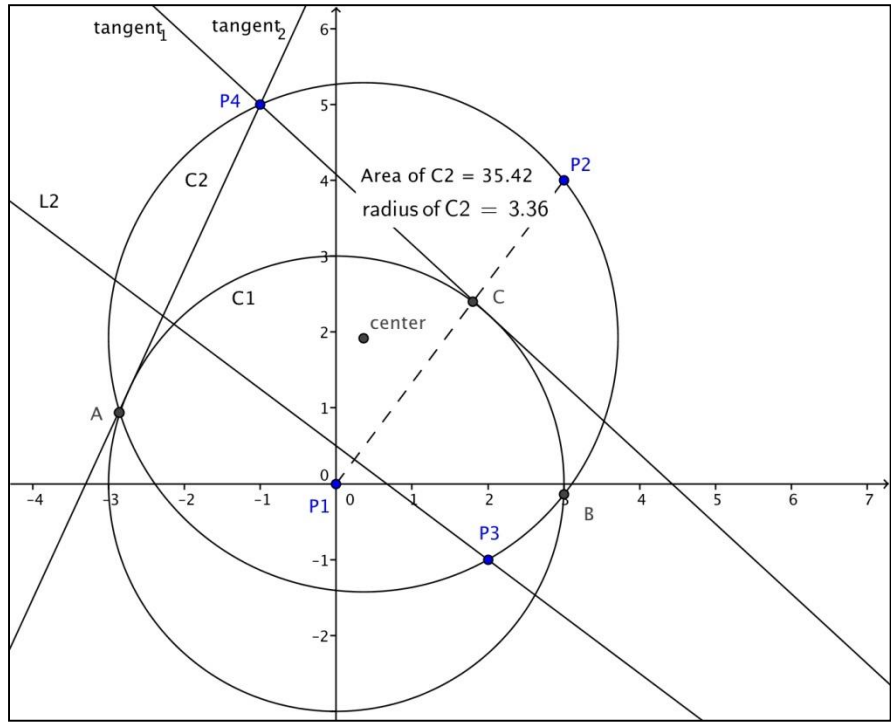


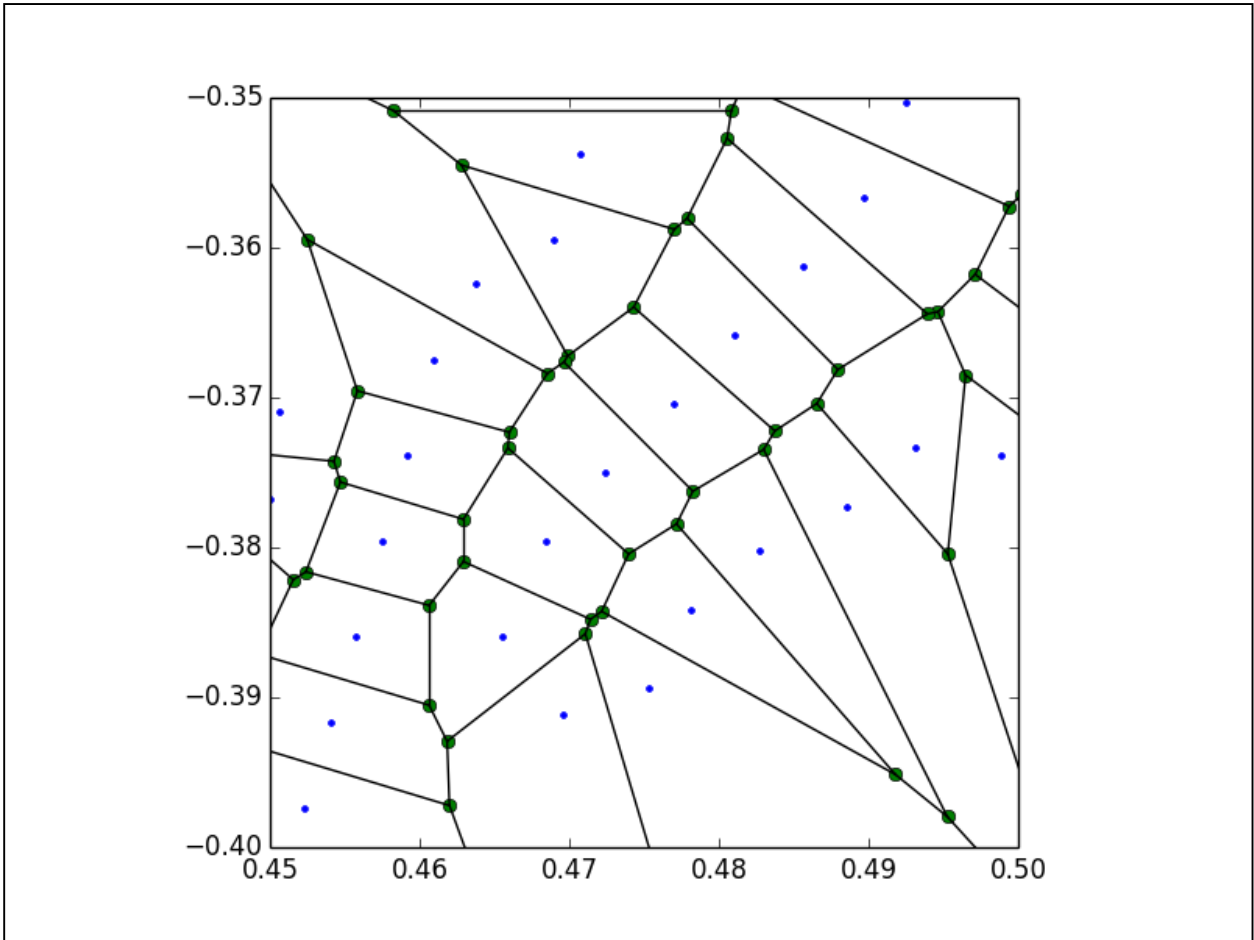
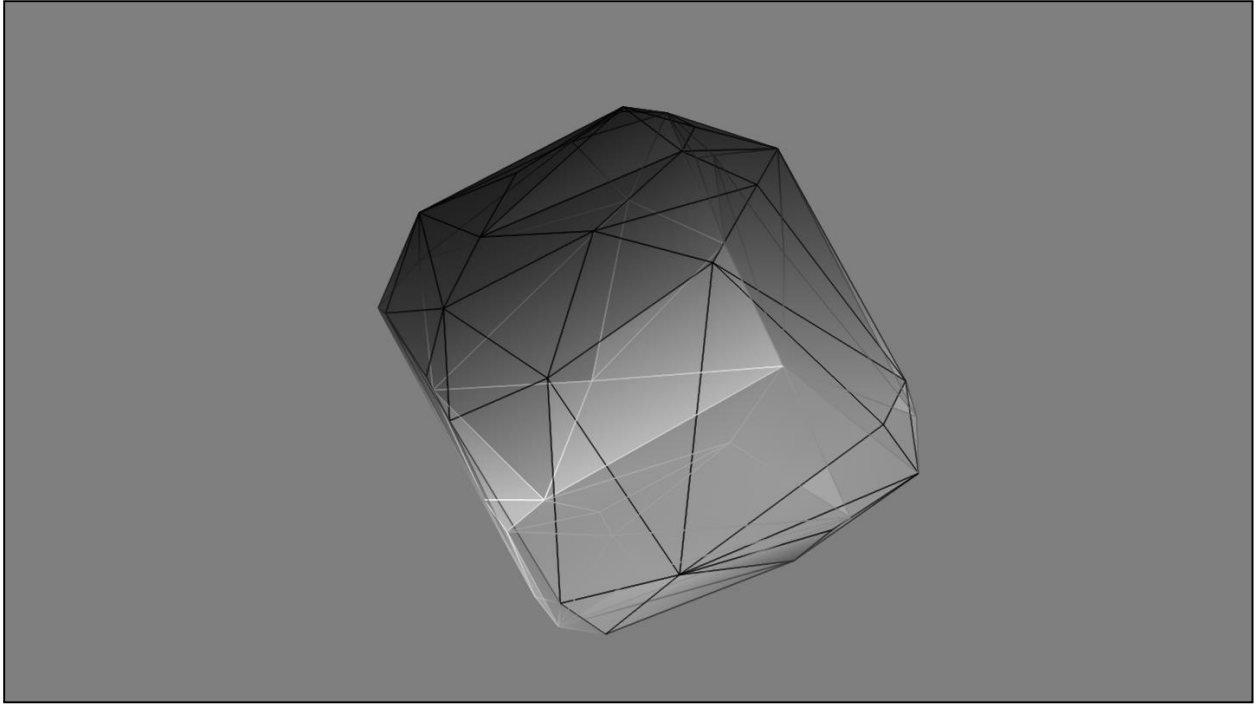


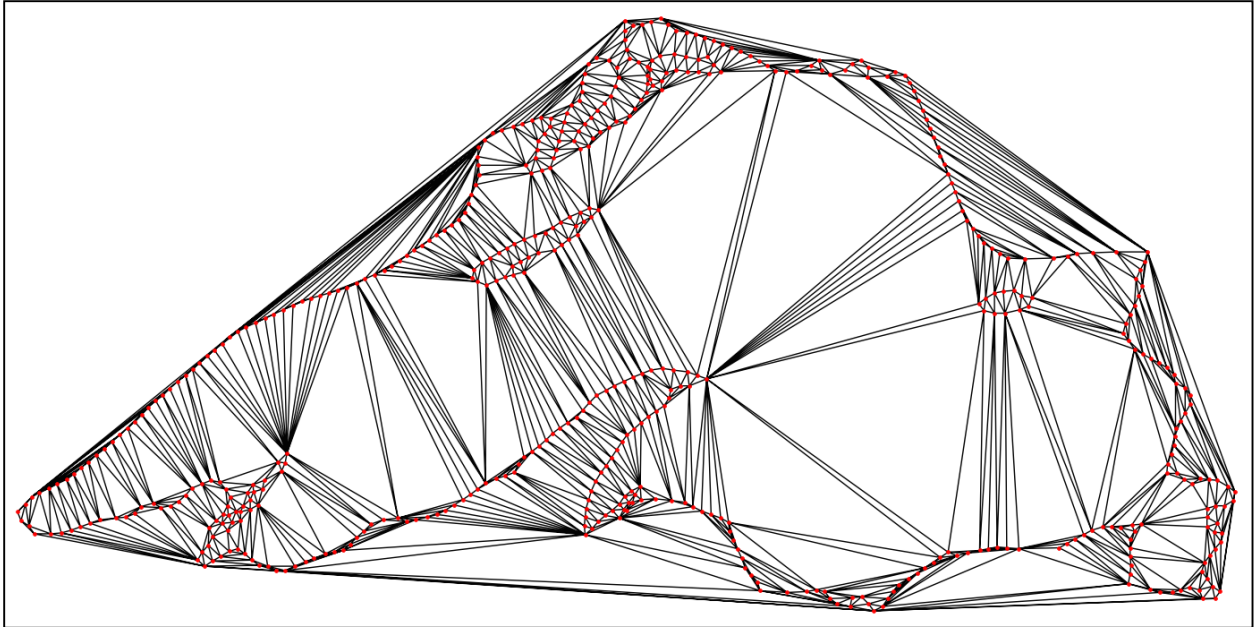


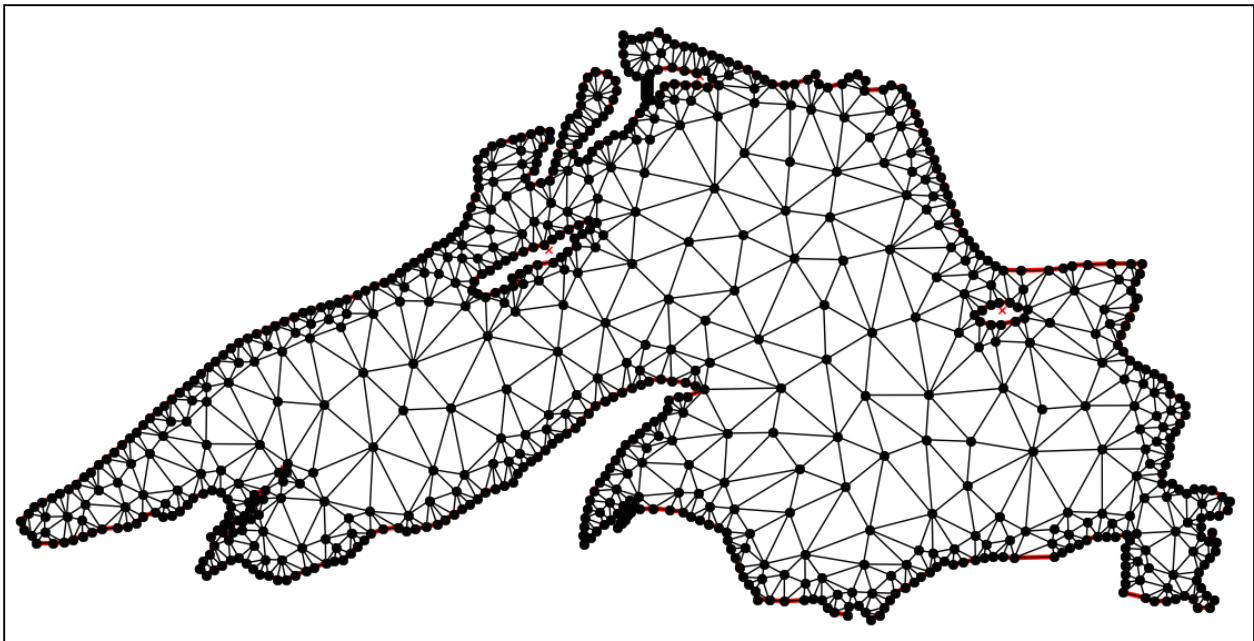
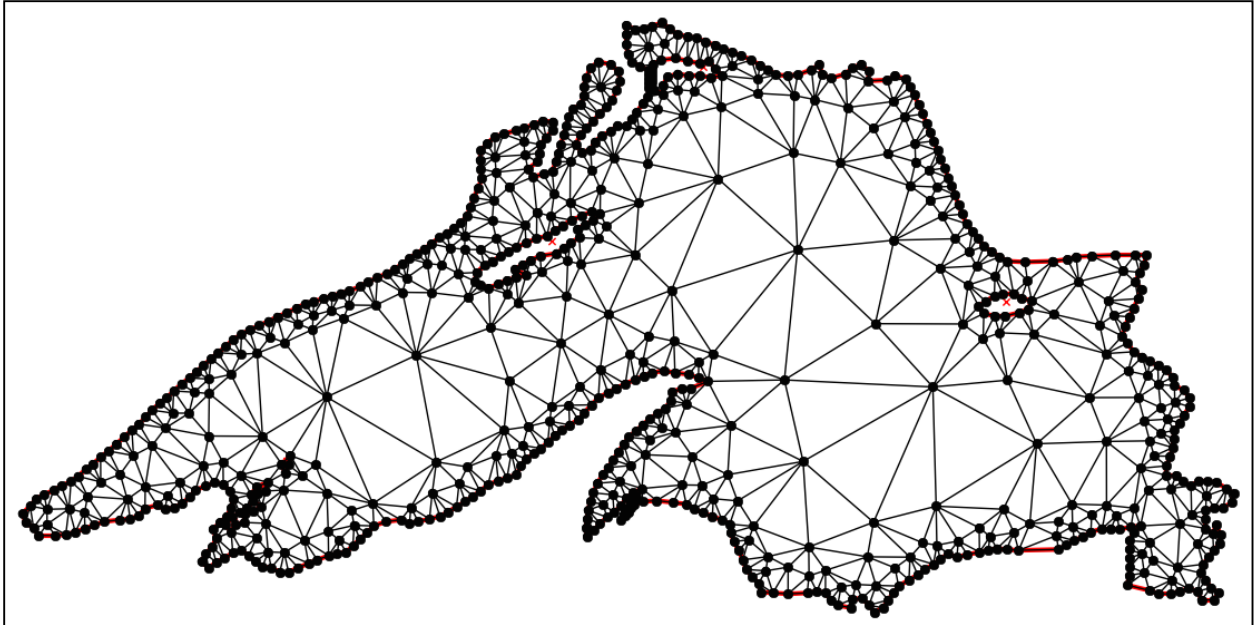
Chapter 6: Computational Geometry

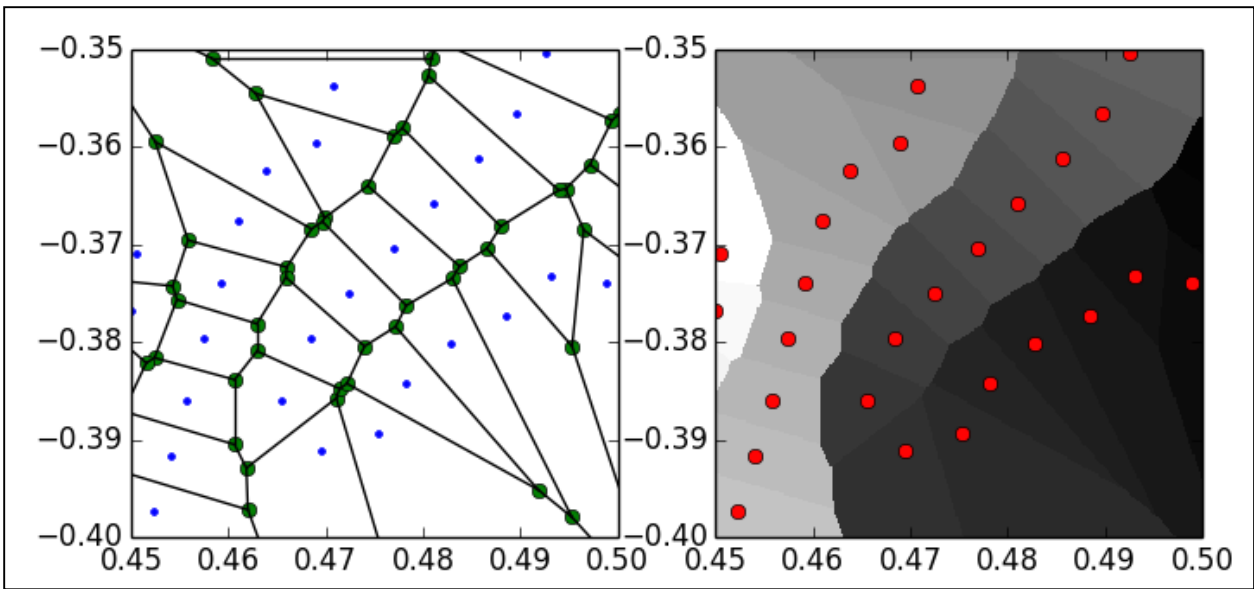
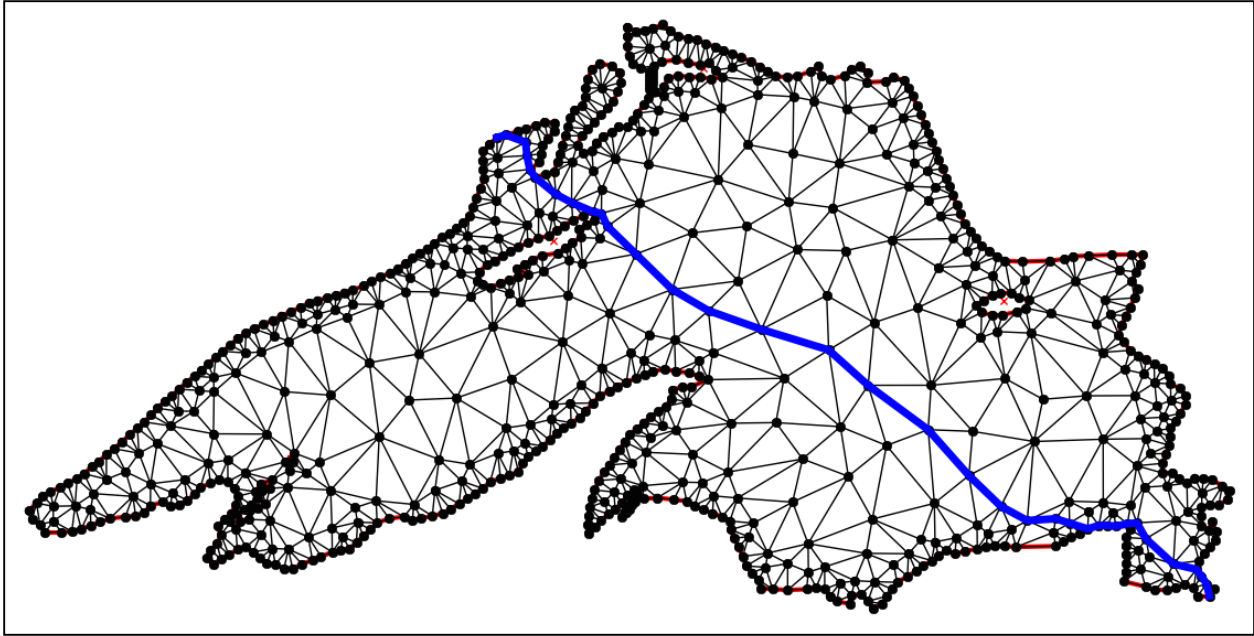


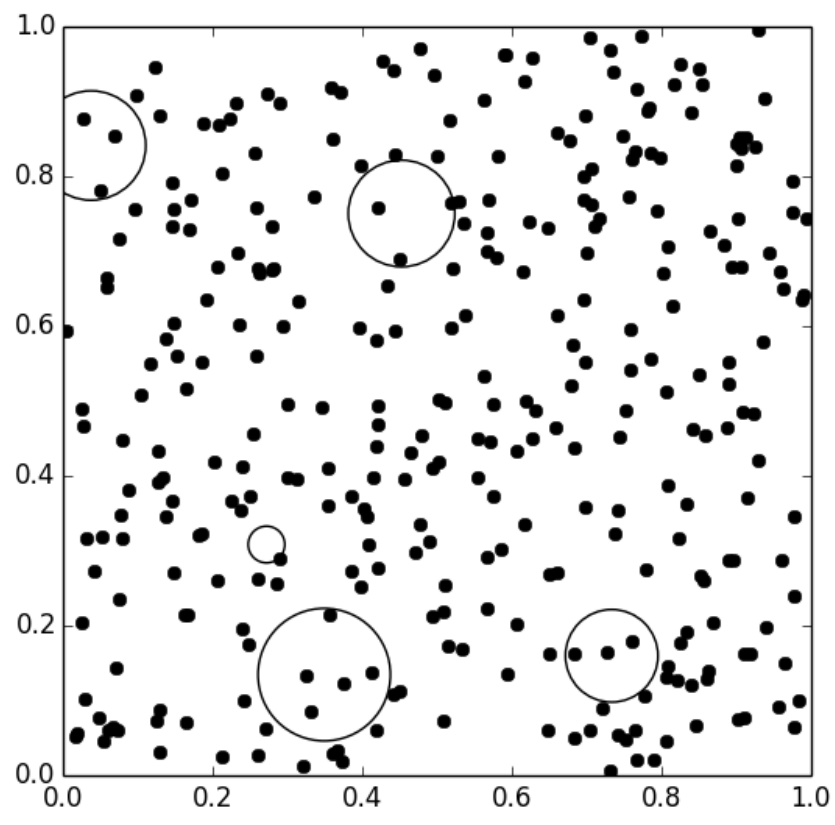


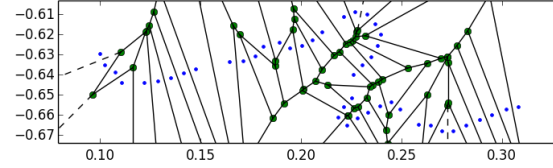
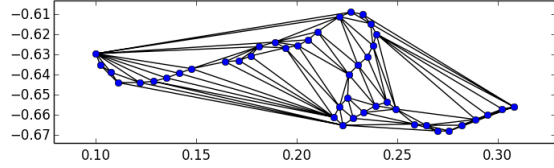
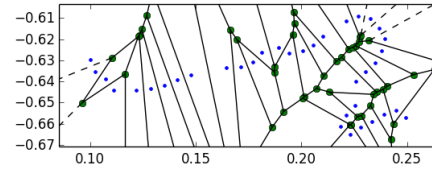
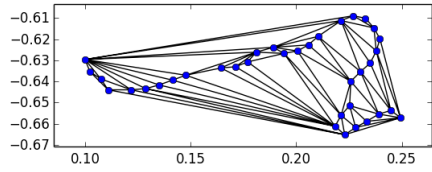
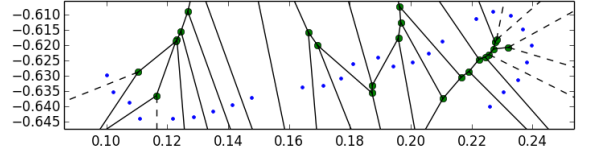
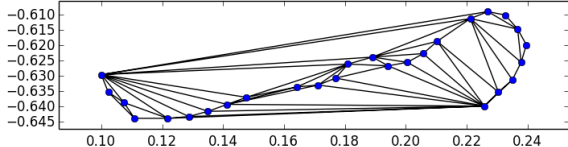
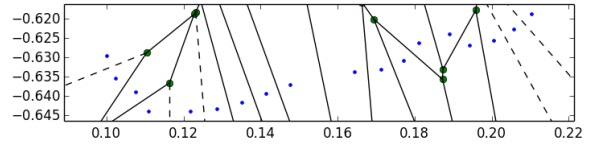
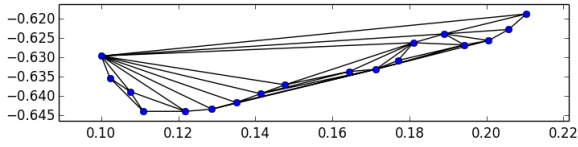


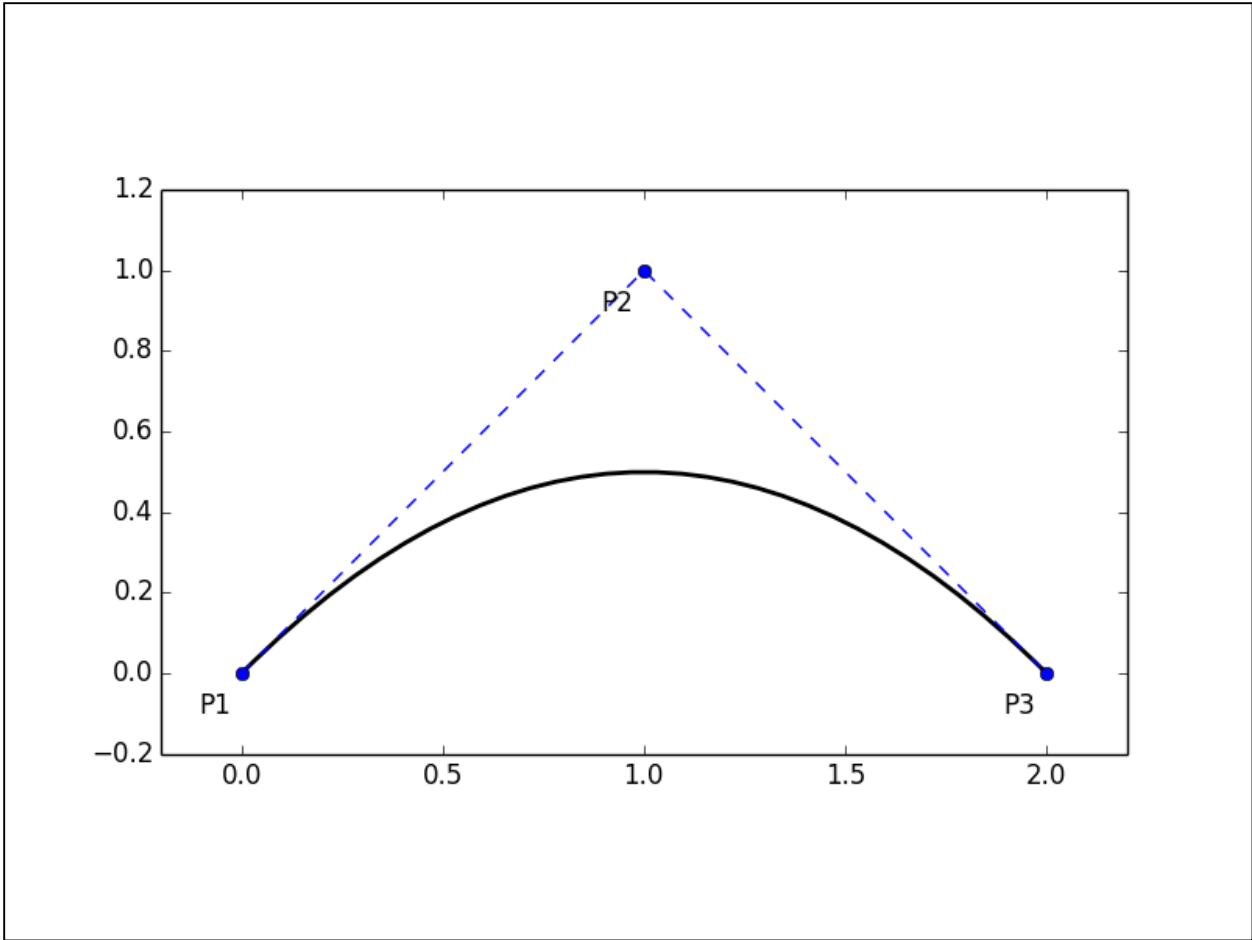


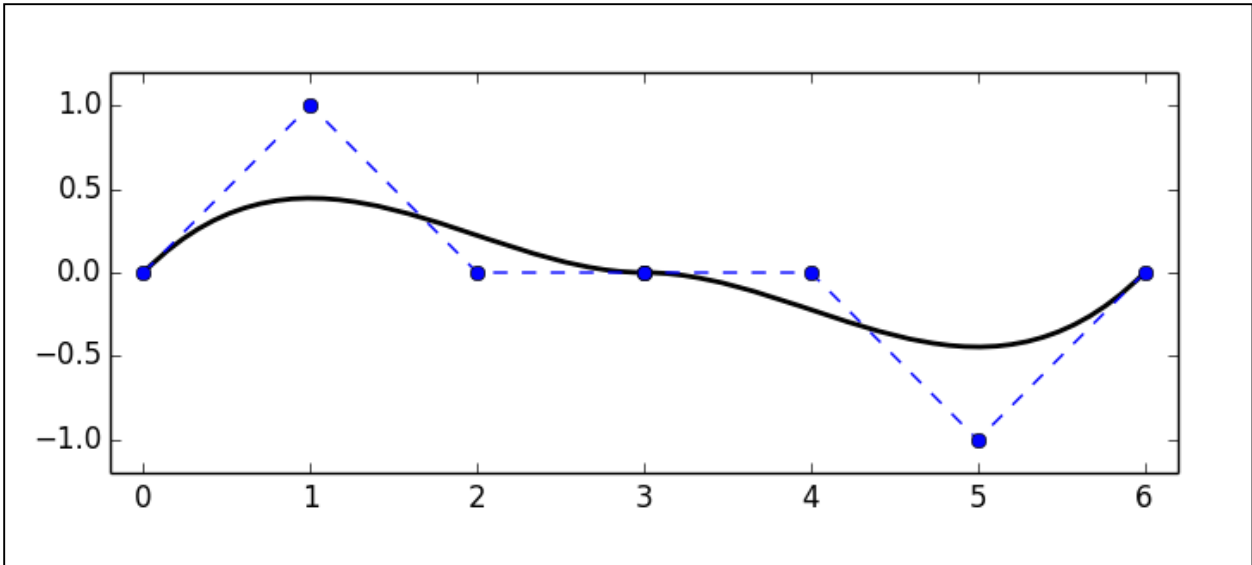
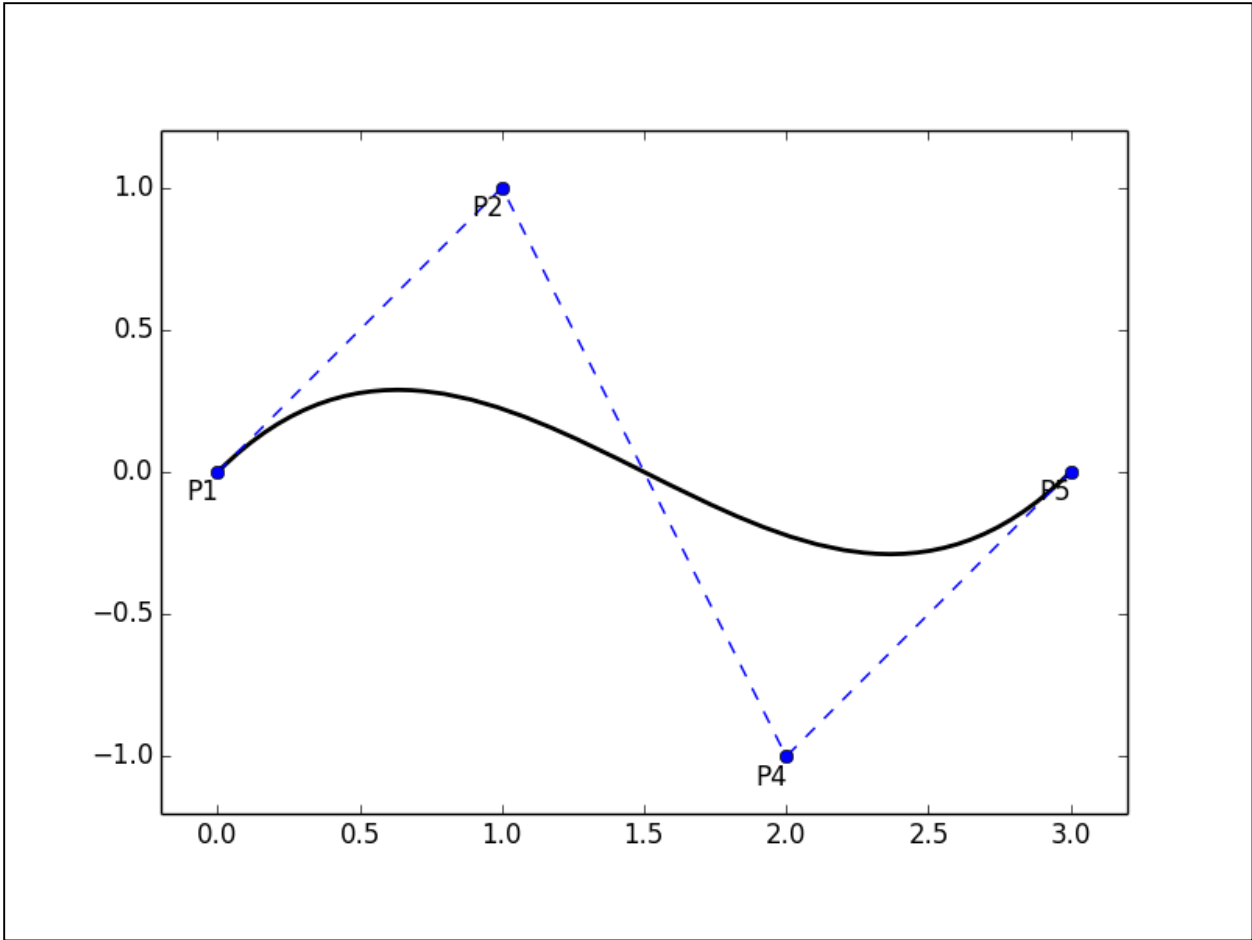


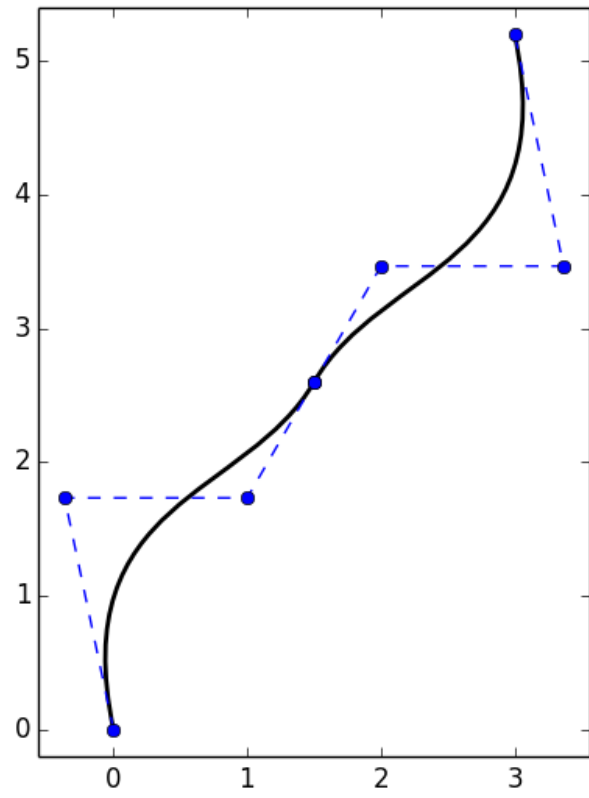




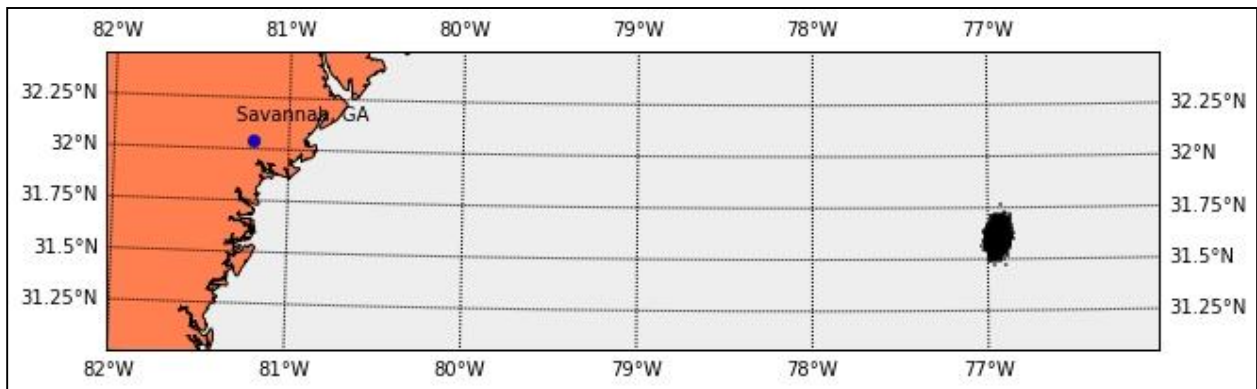
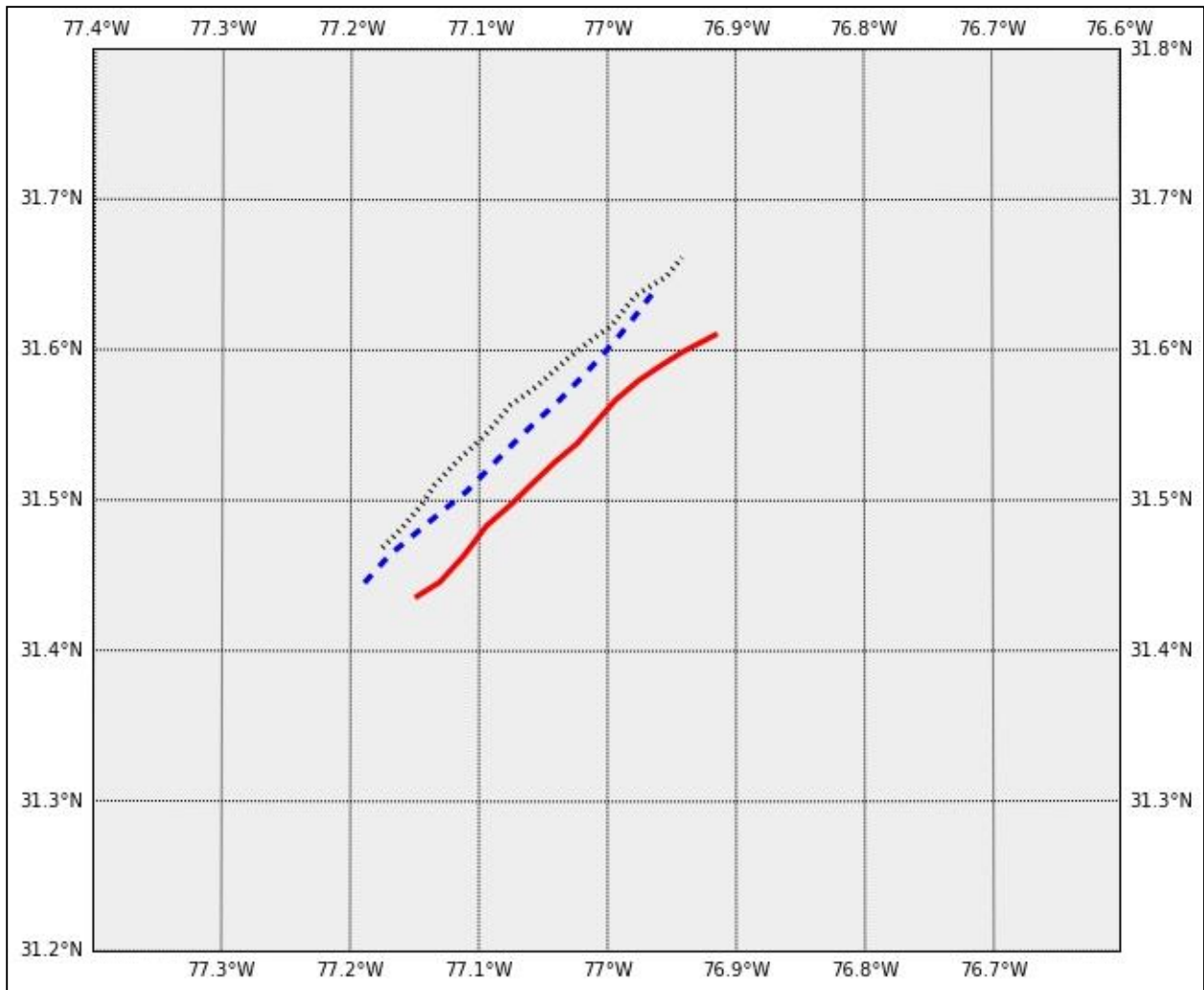


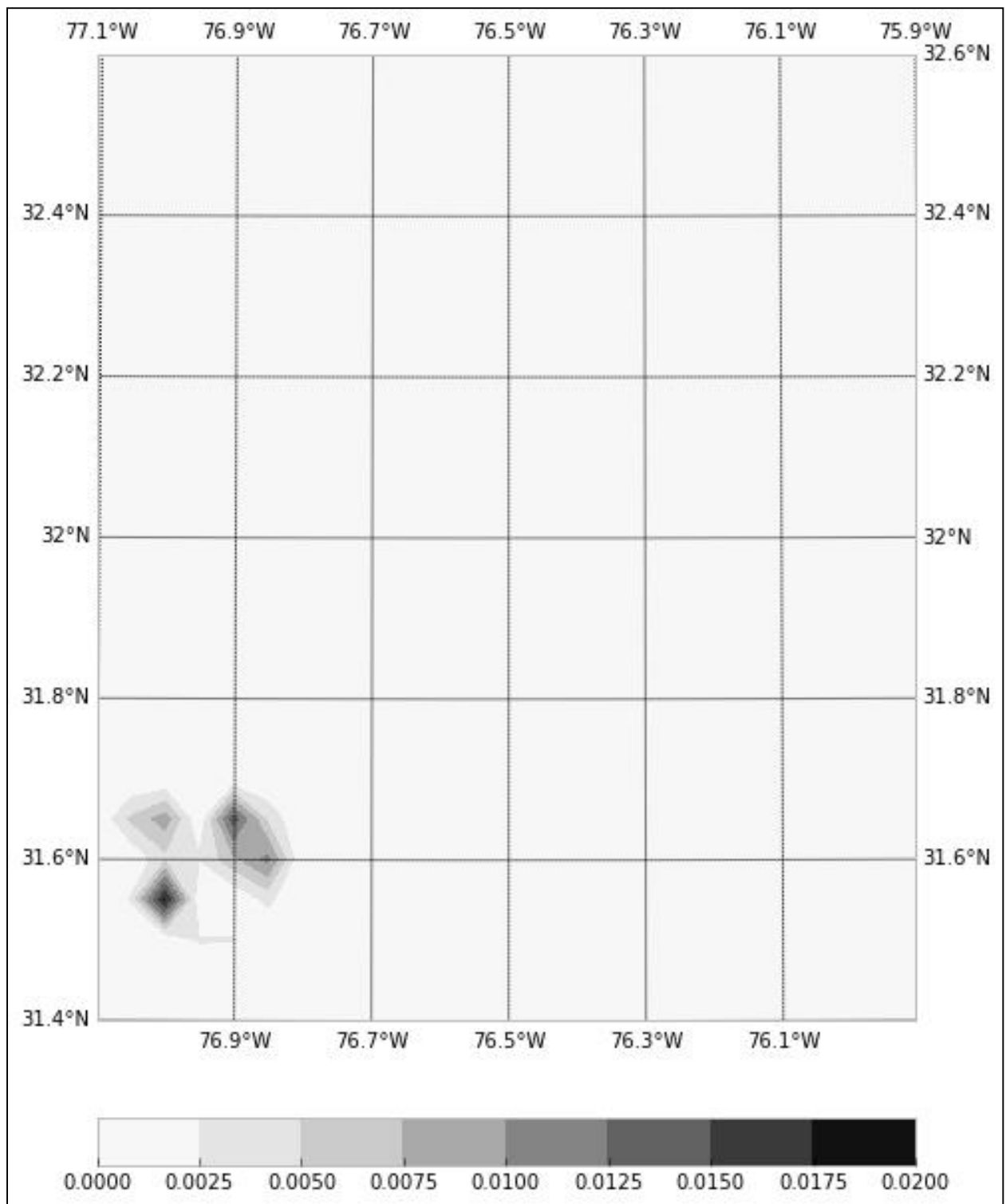


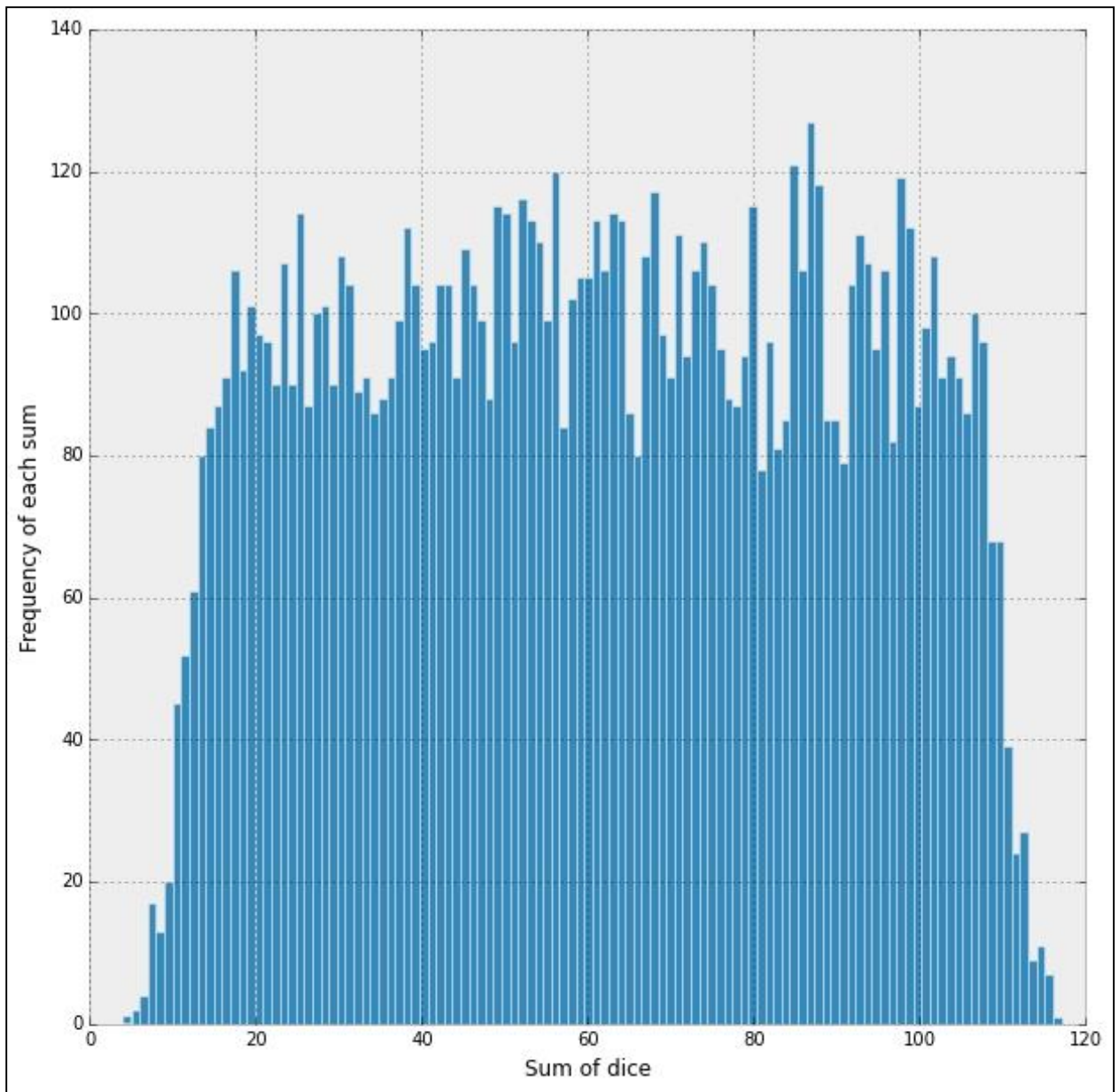


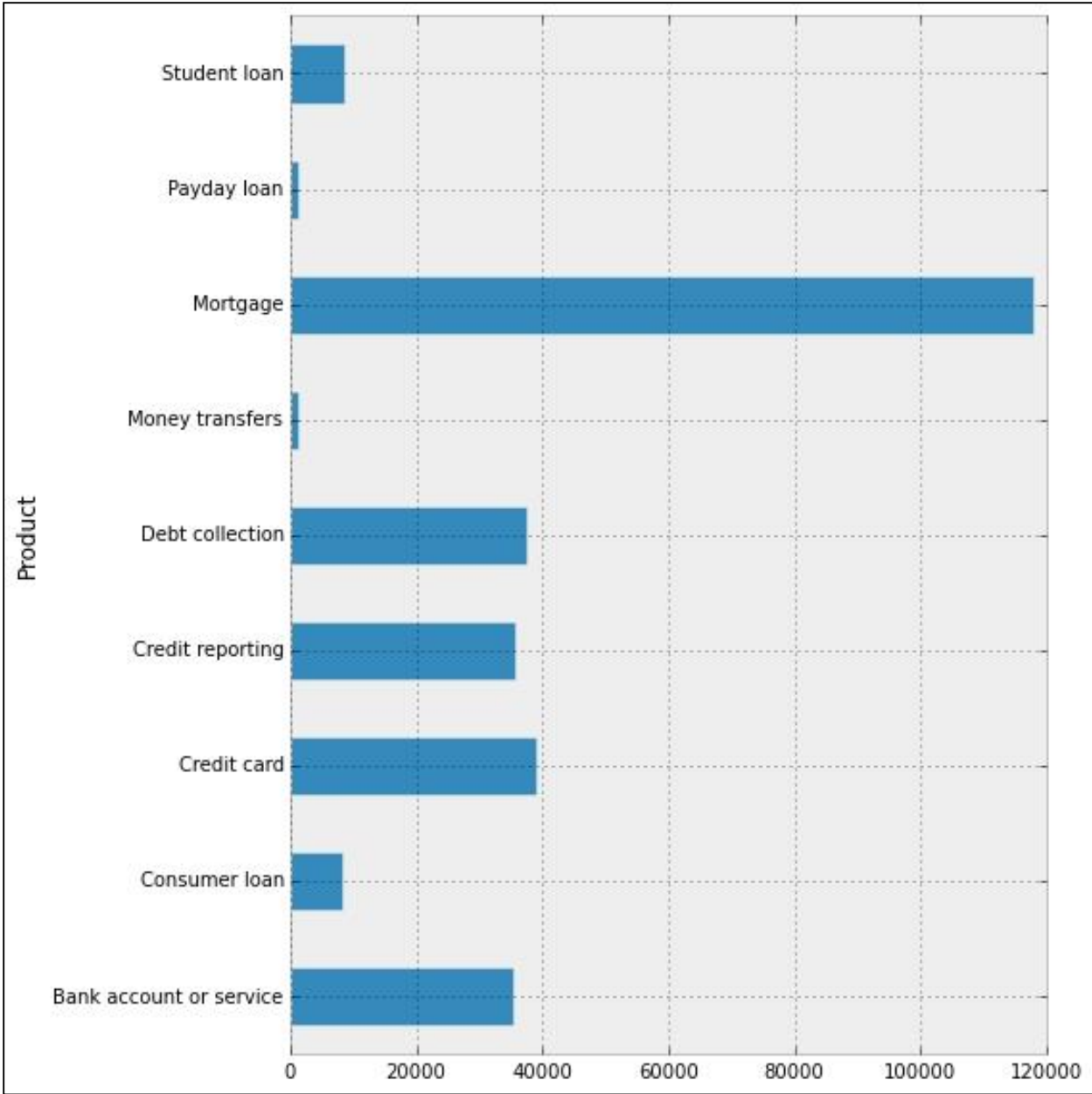


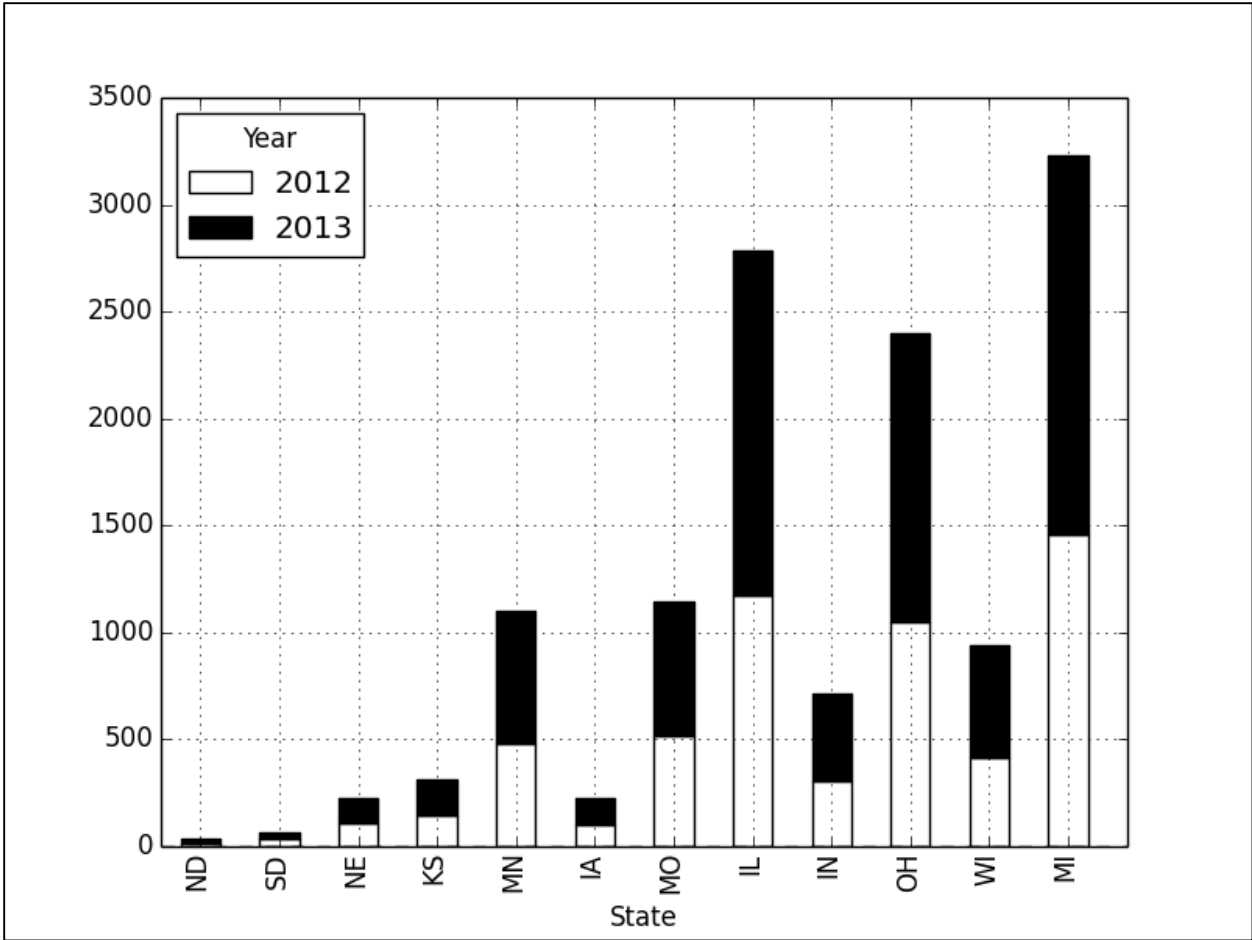
Chapter 7: Descriptive Statistics

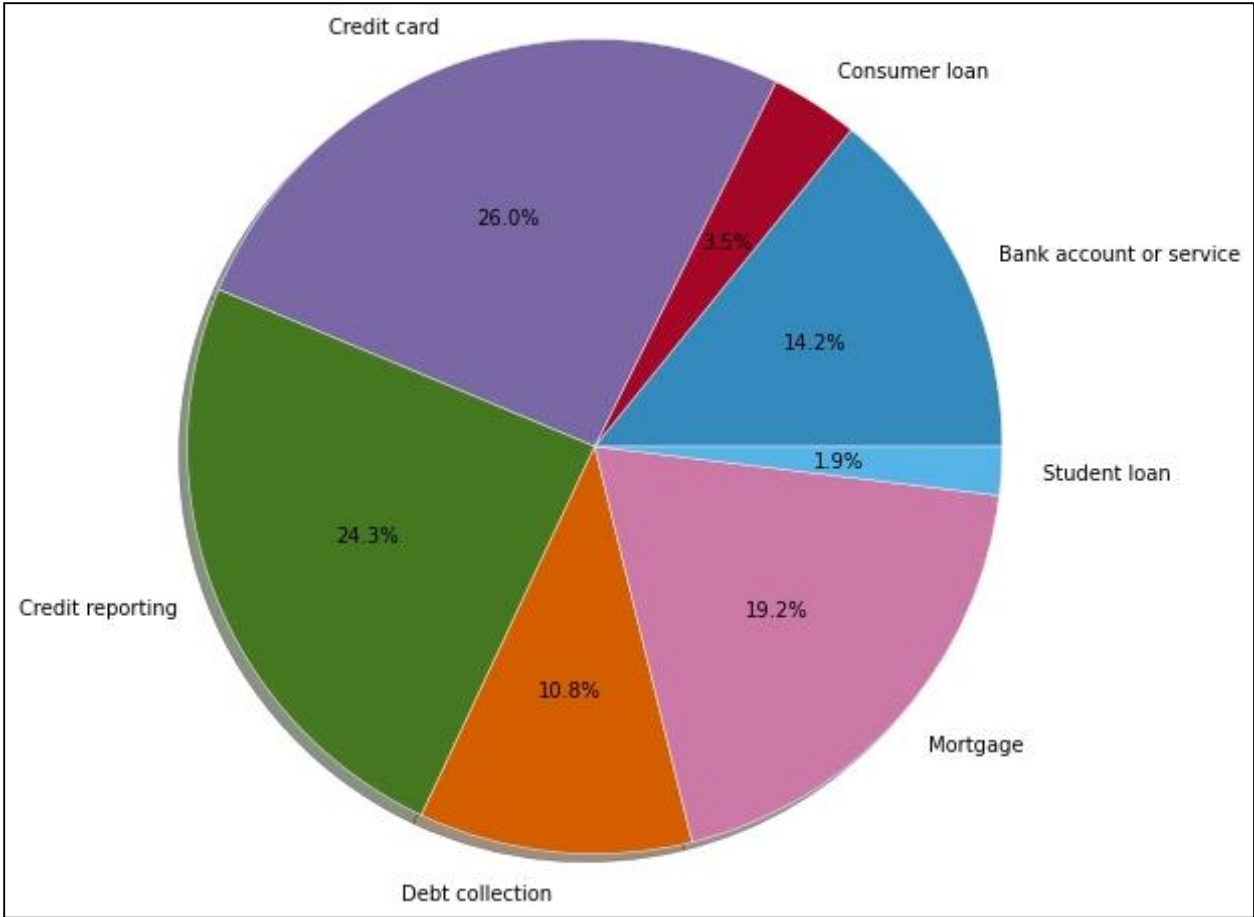


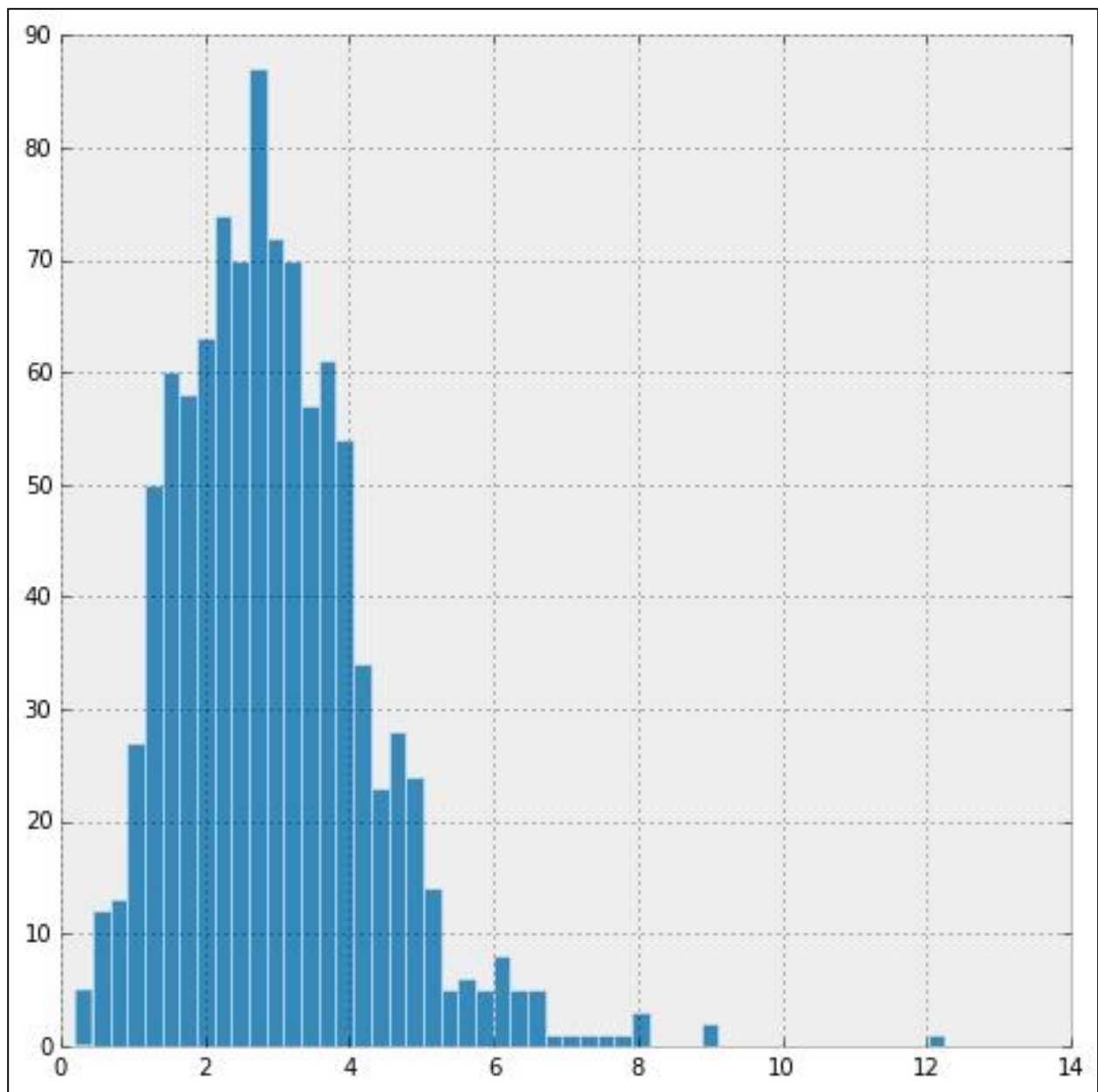


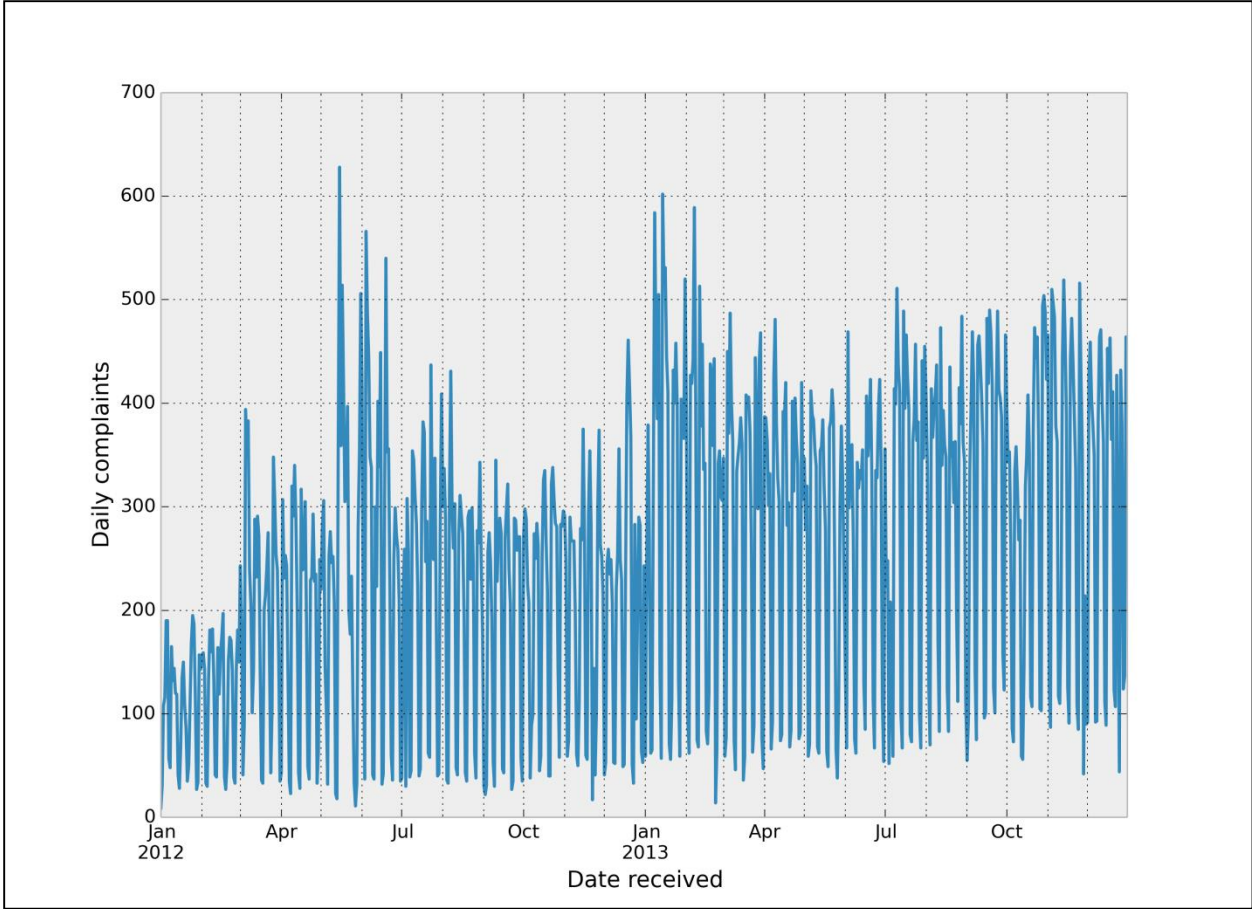


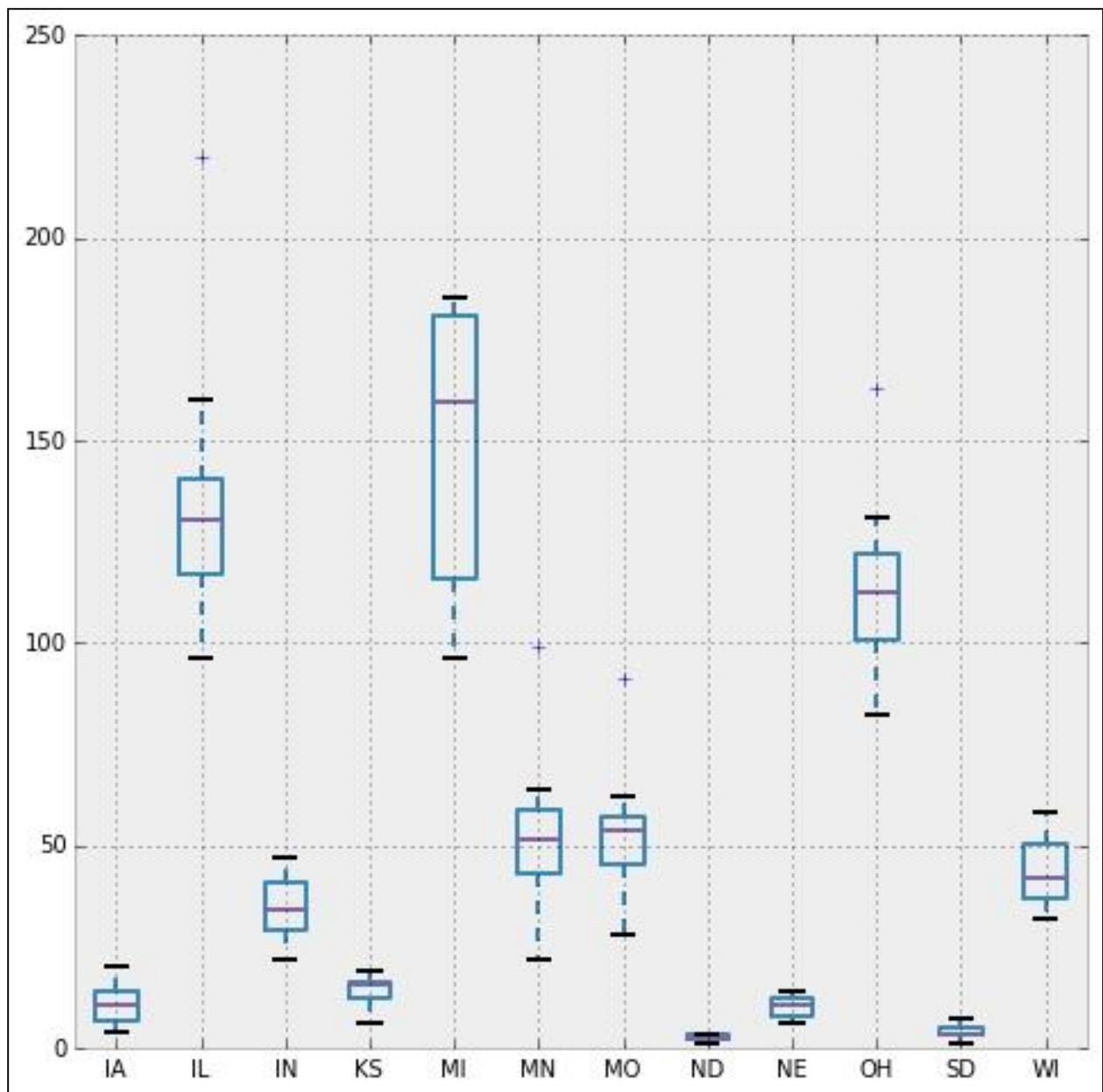


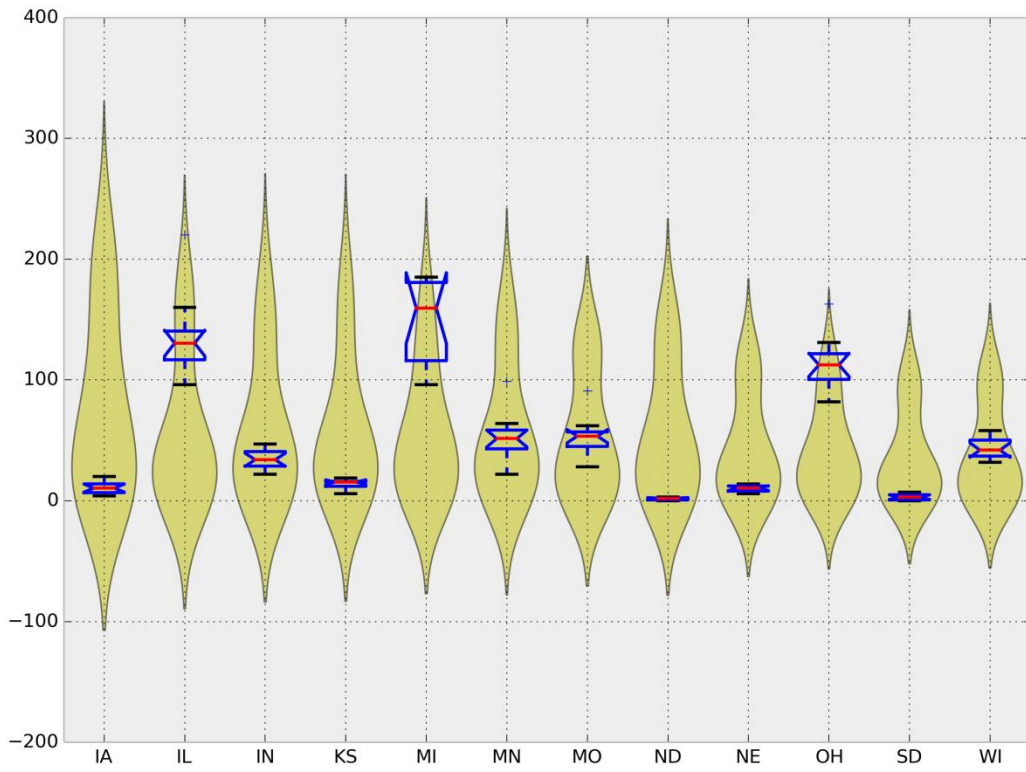


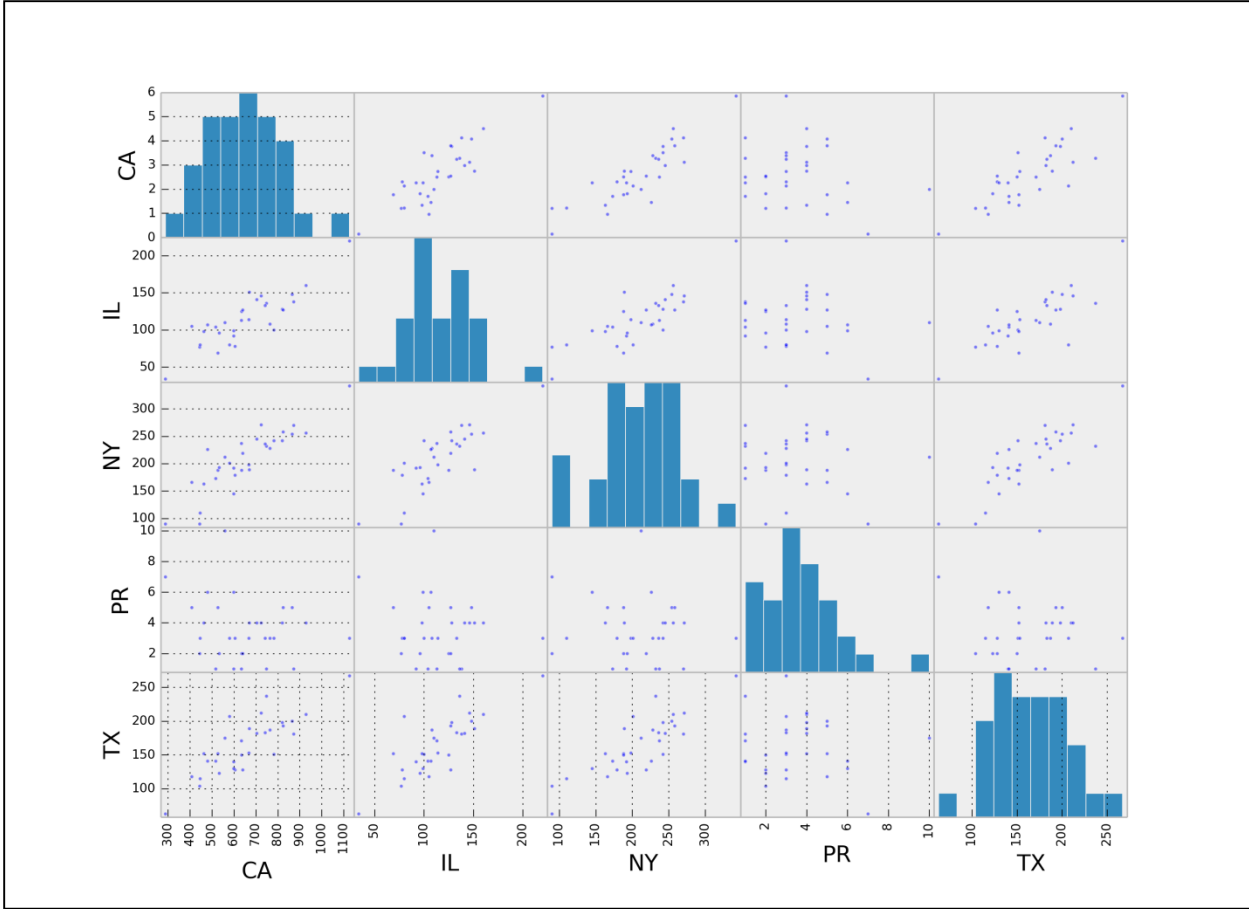


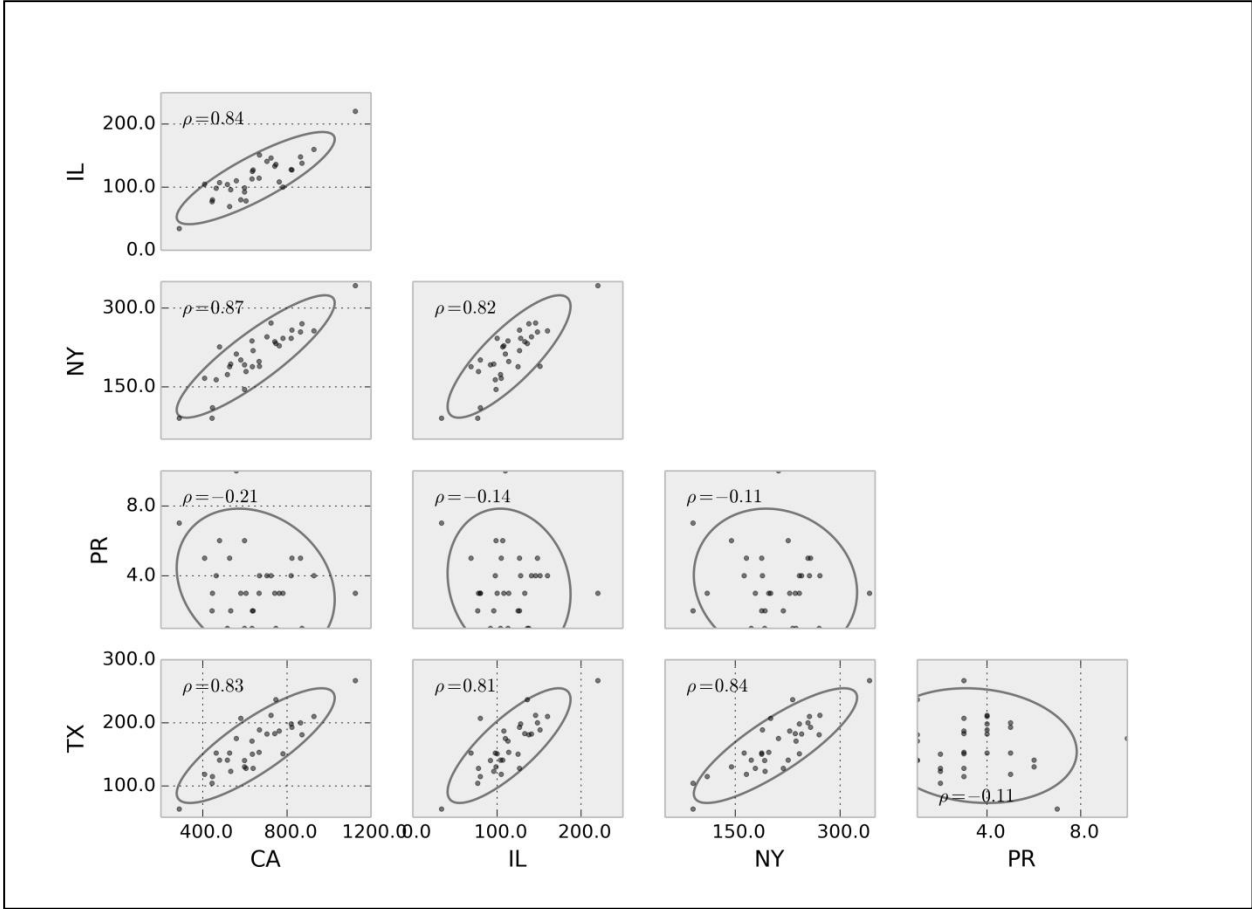


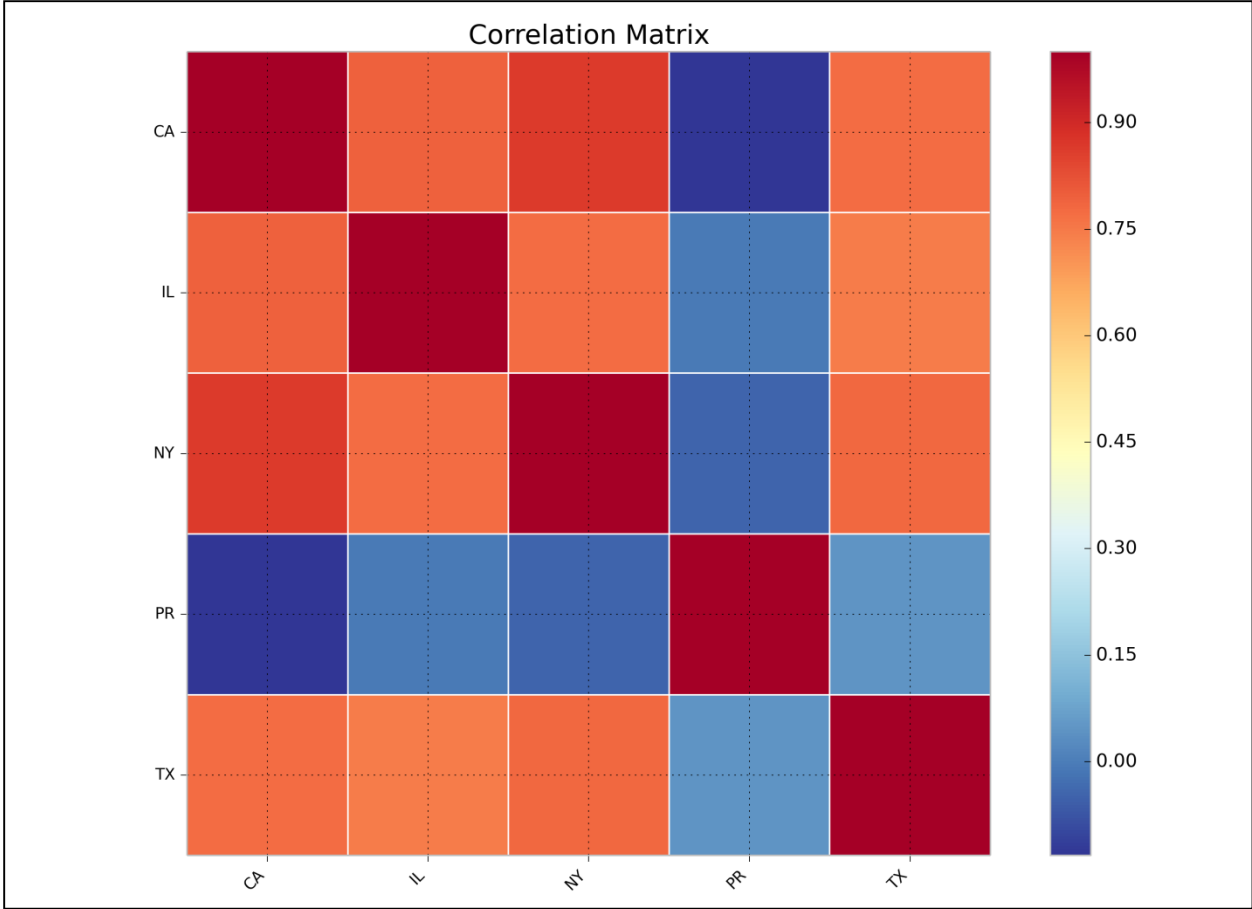


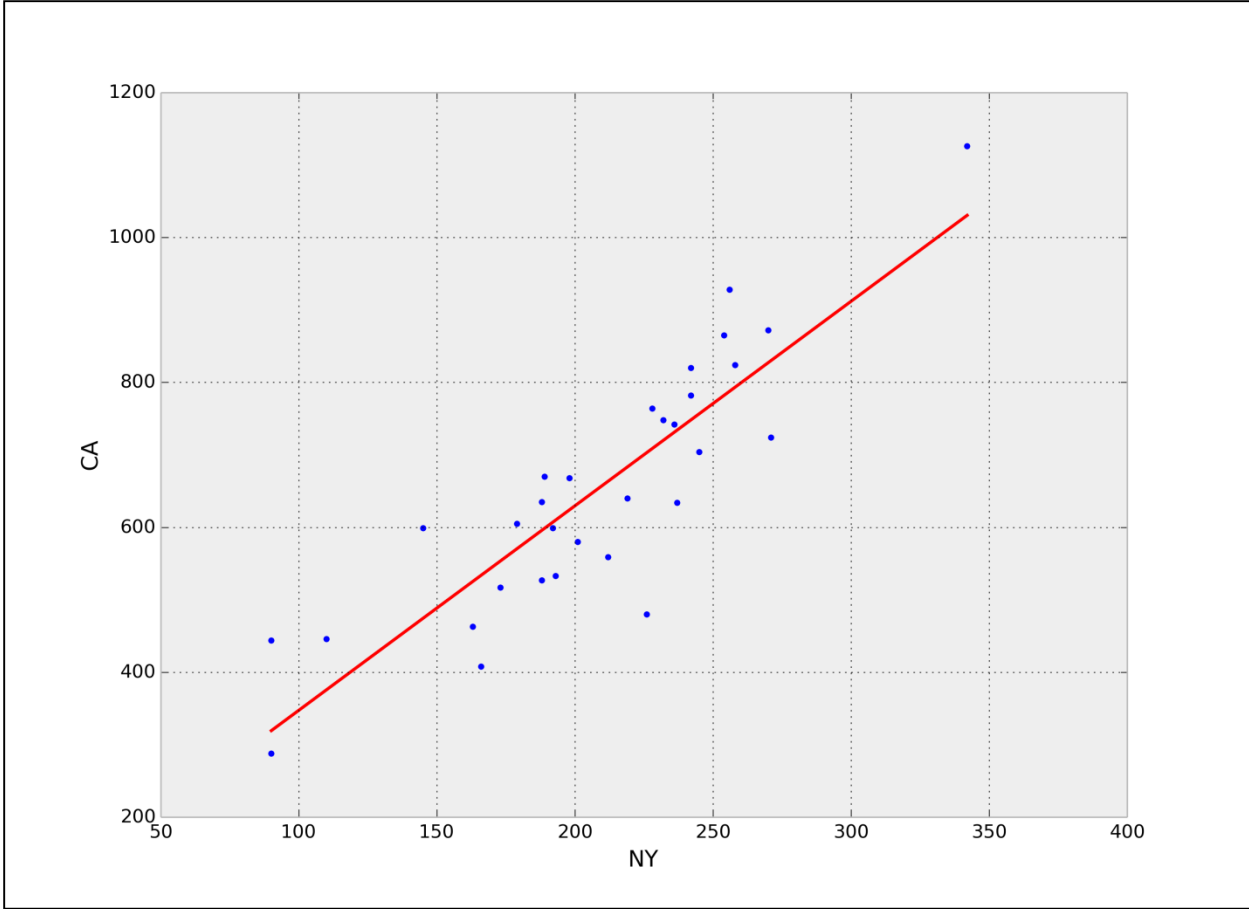


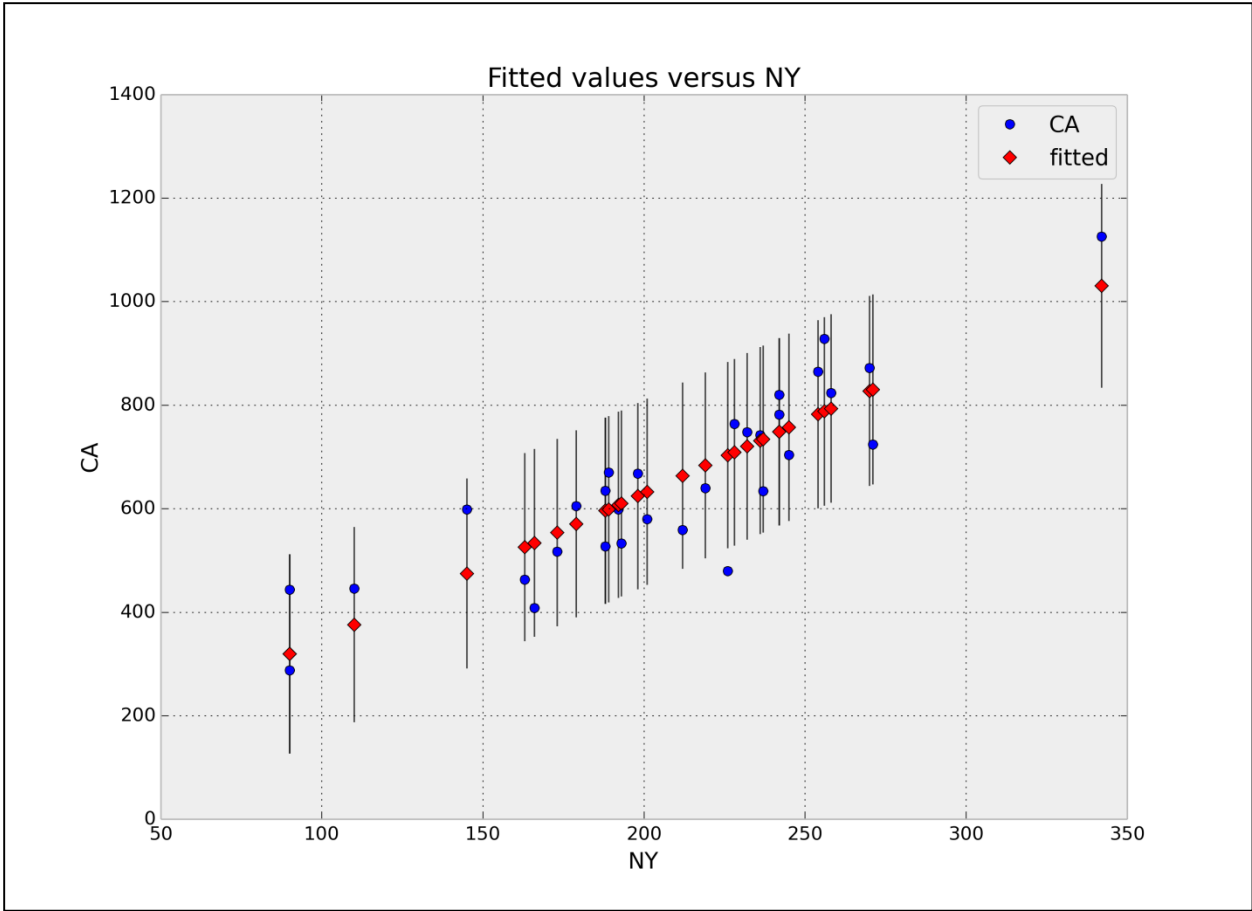


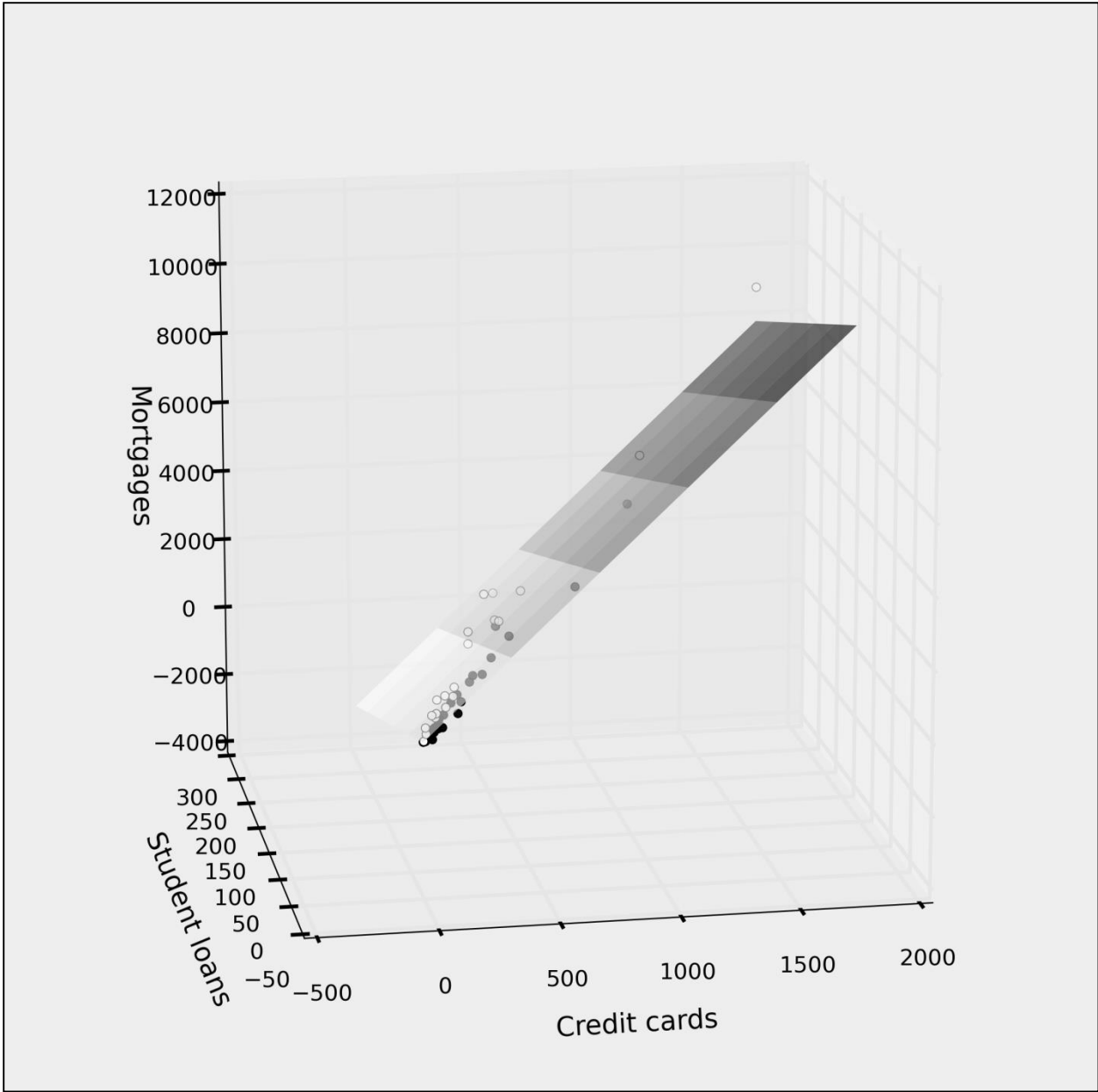


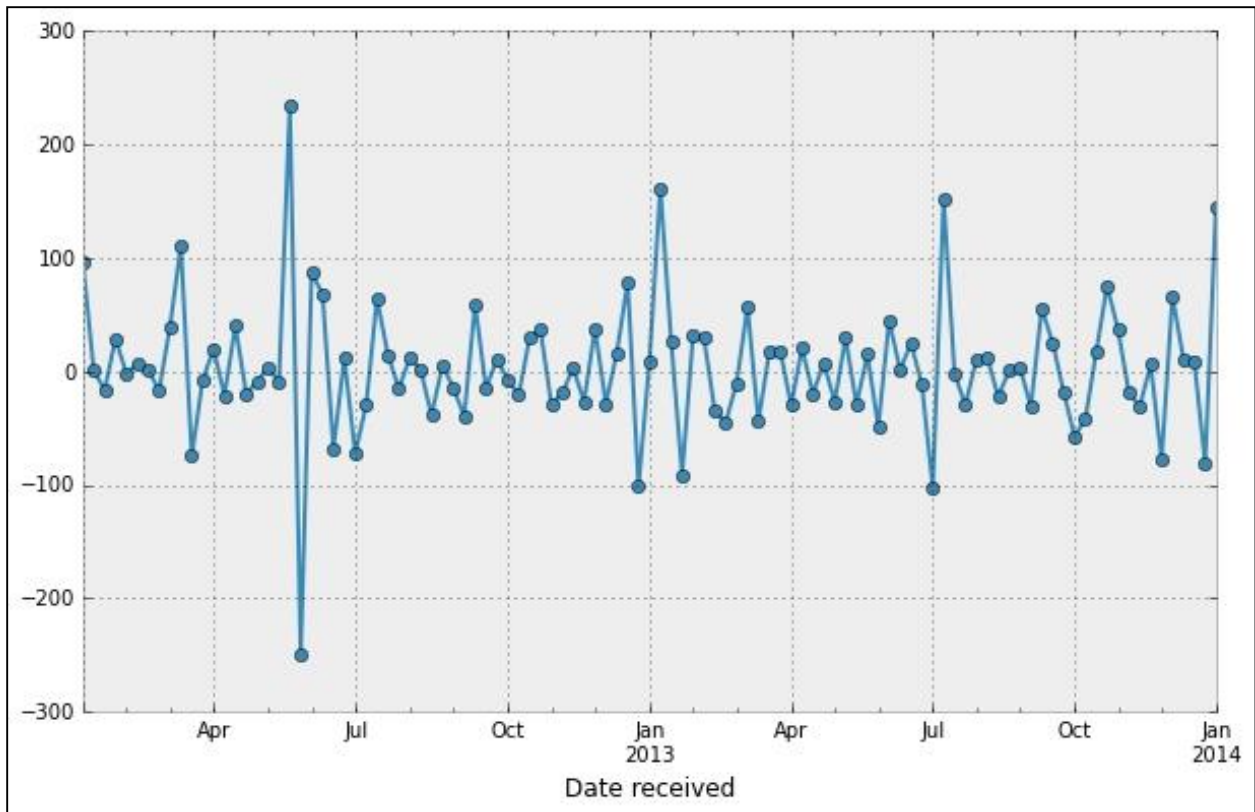
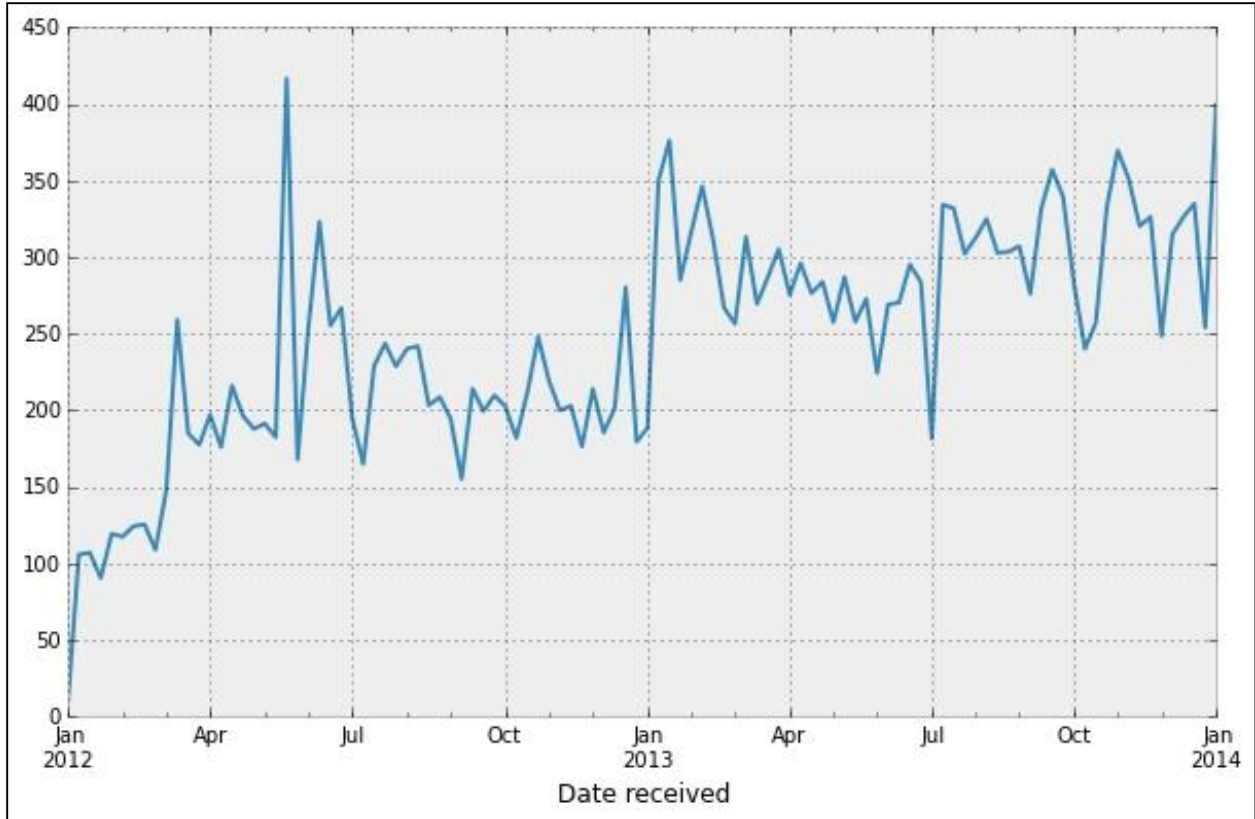


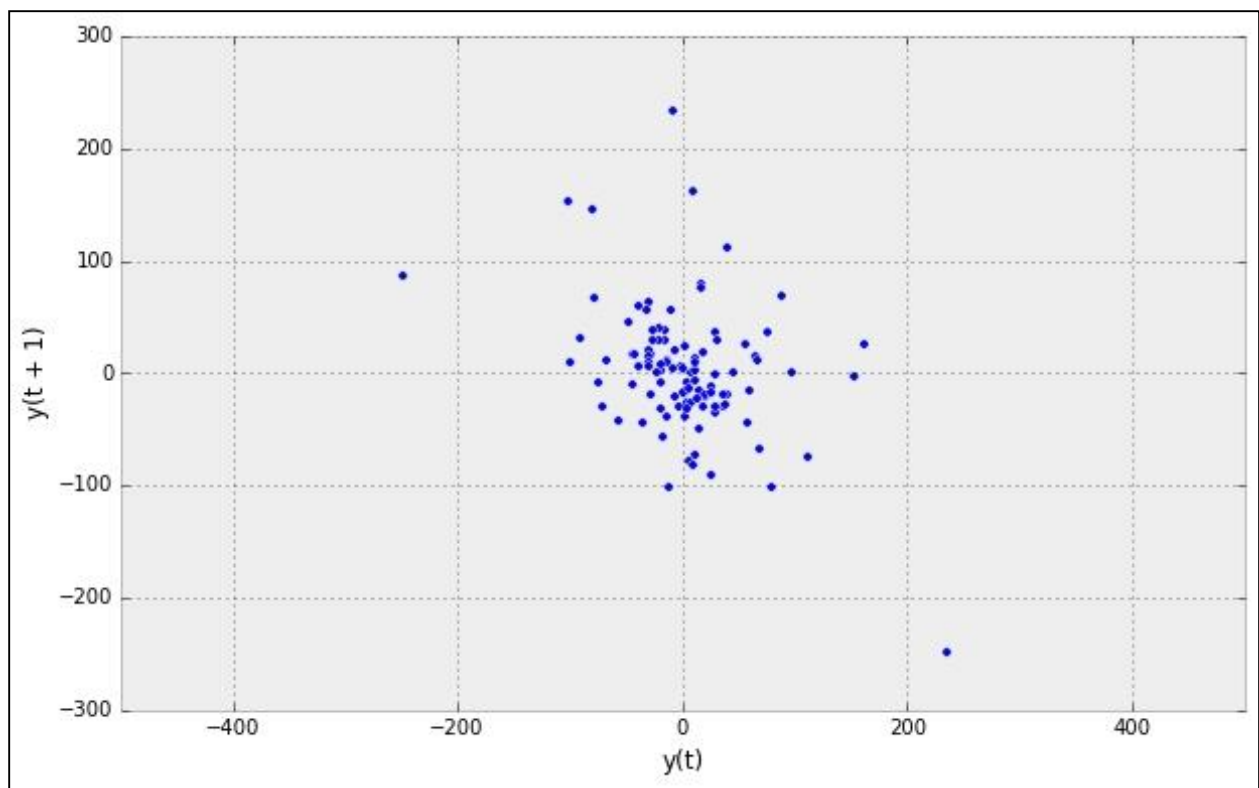
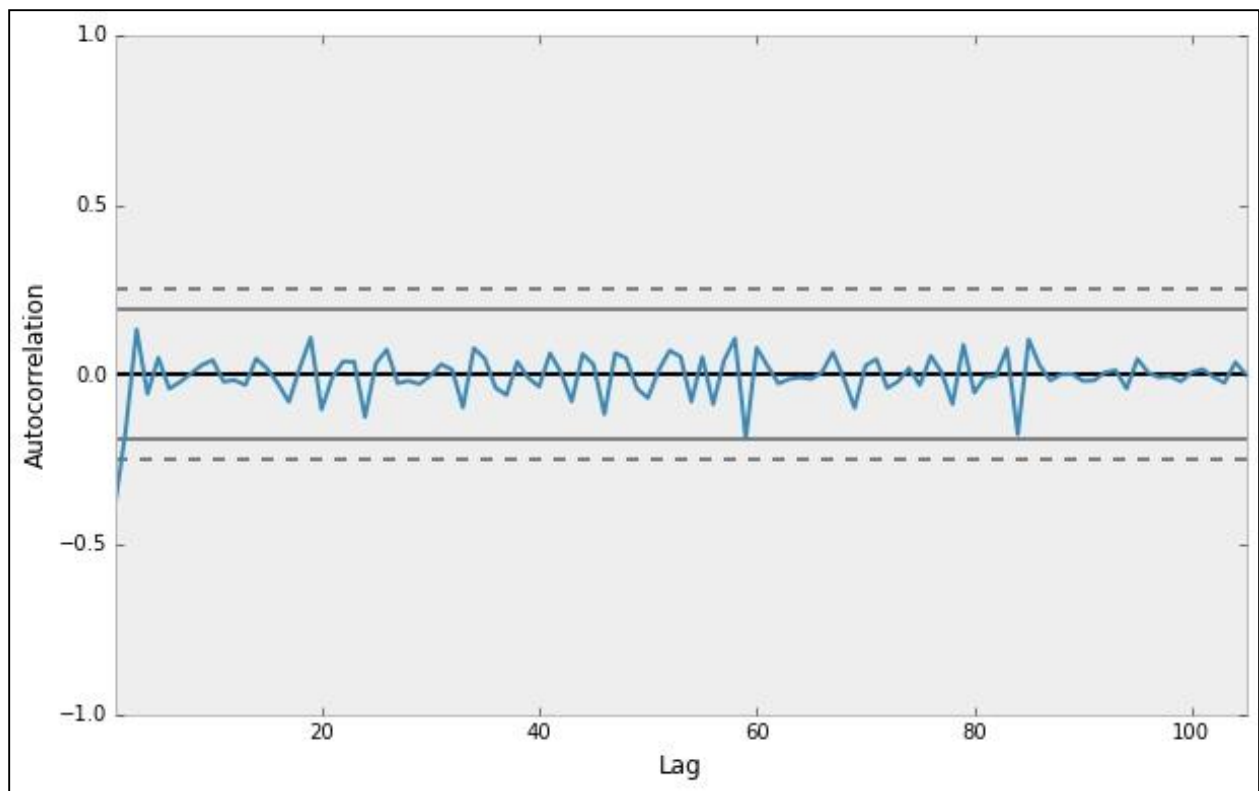


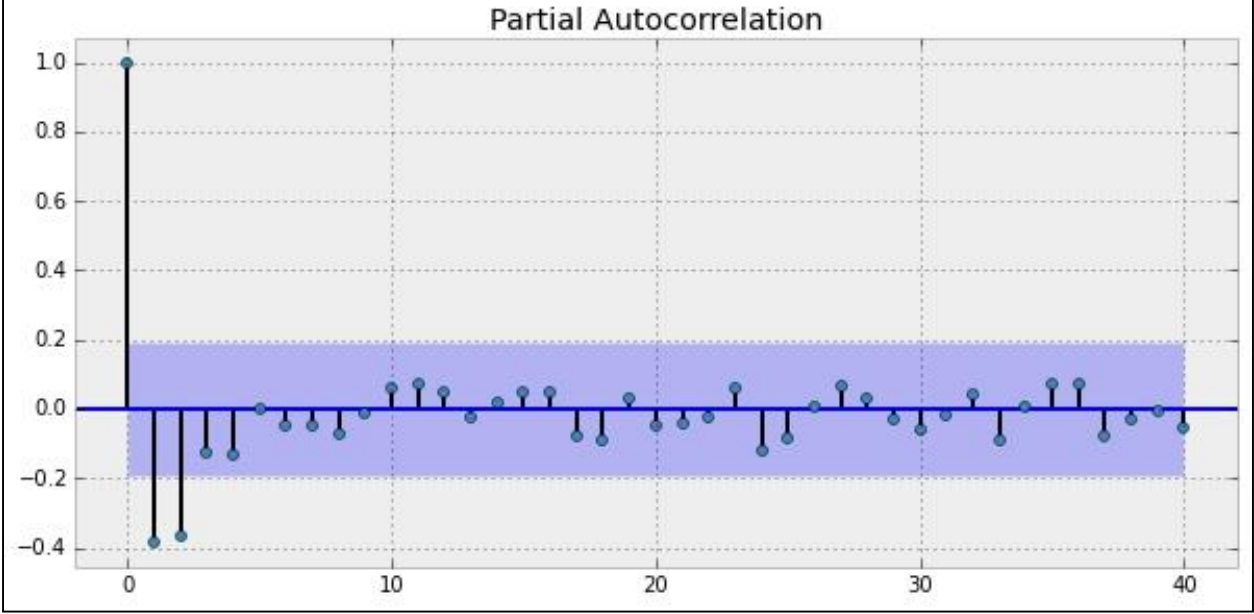
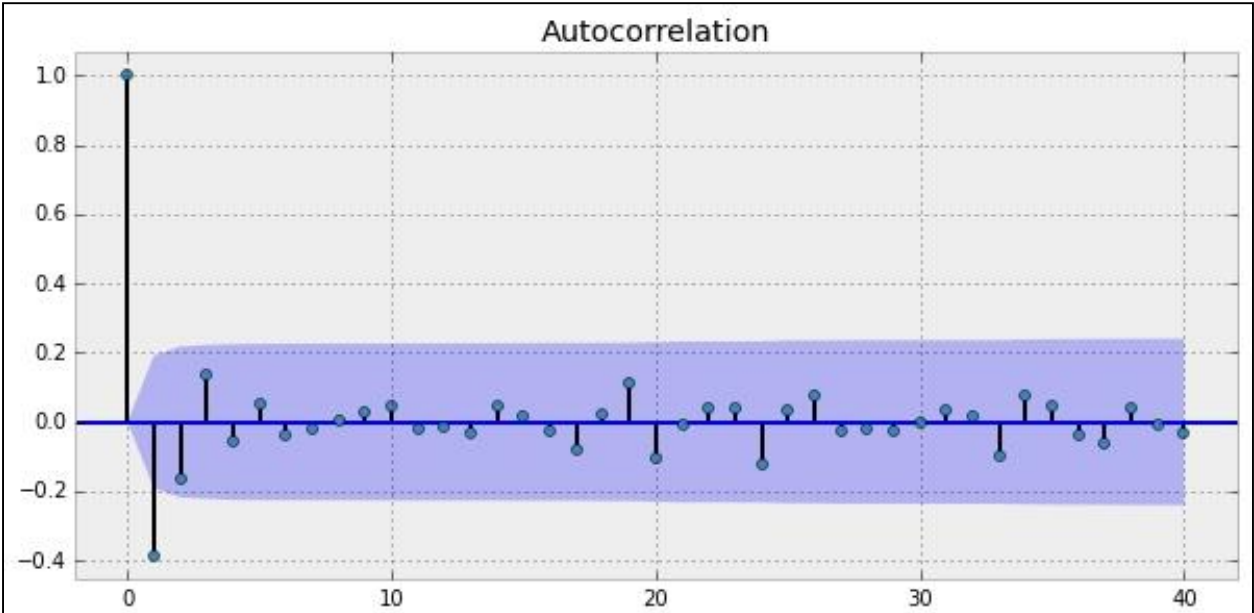












ARIMA Model Results

```

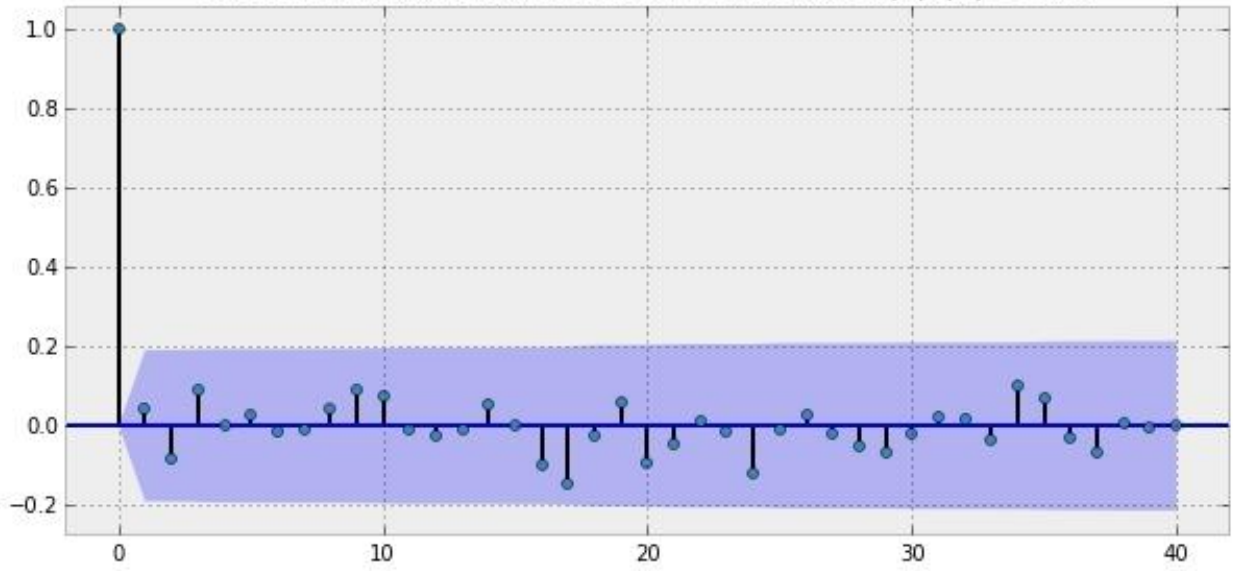
Dep. Variable:          D.y      No. Observations:          105
Model:                 ARIMA(0, 1, 1)  Log Likelihood             -555.940
Method:                css-mle      S.D. of innovations        48.047
Date:                  Tue, 21 Oct 2014  AIC                        1117.881
Time:                  00:01:44      BIC                        1125.843
Sample:                01-08-2012     HQIC                       1121.107
                    - 01-05-2014
    
```

	coef	std err	z	P> z	[95.0% Conf. Int.]	
const	2.4303	1.330	1.827	0.071	-0.177	5.038
ma.L1.D.y	-0.7246	0.070	-10.341	0.000	-0.862	-0.587

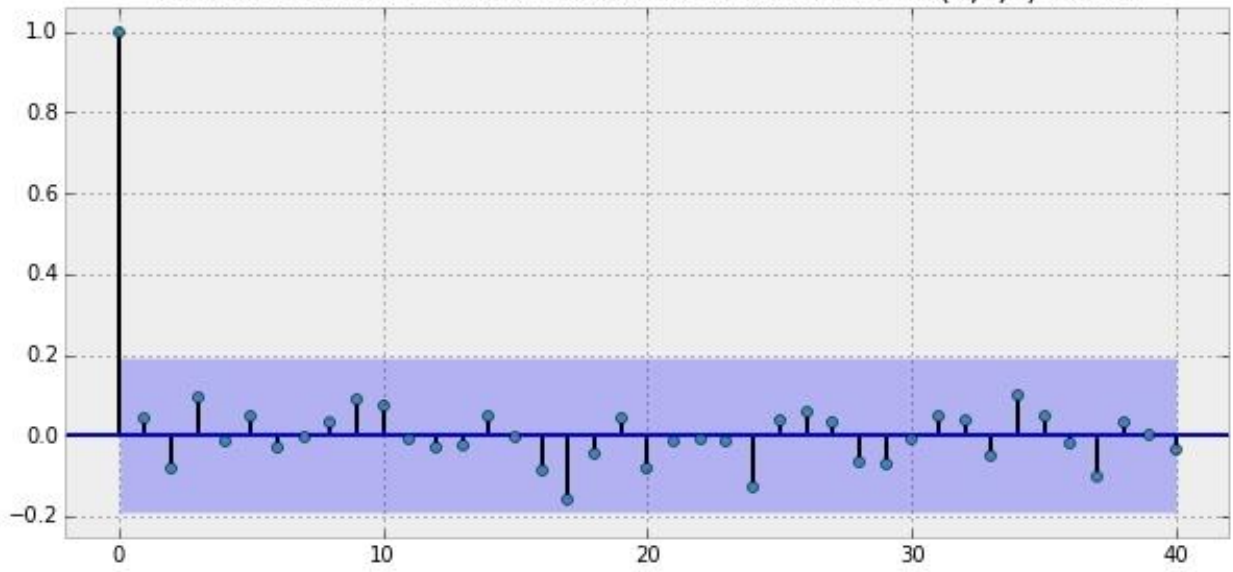
Roots

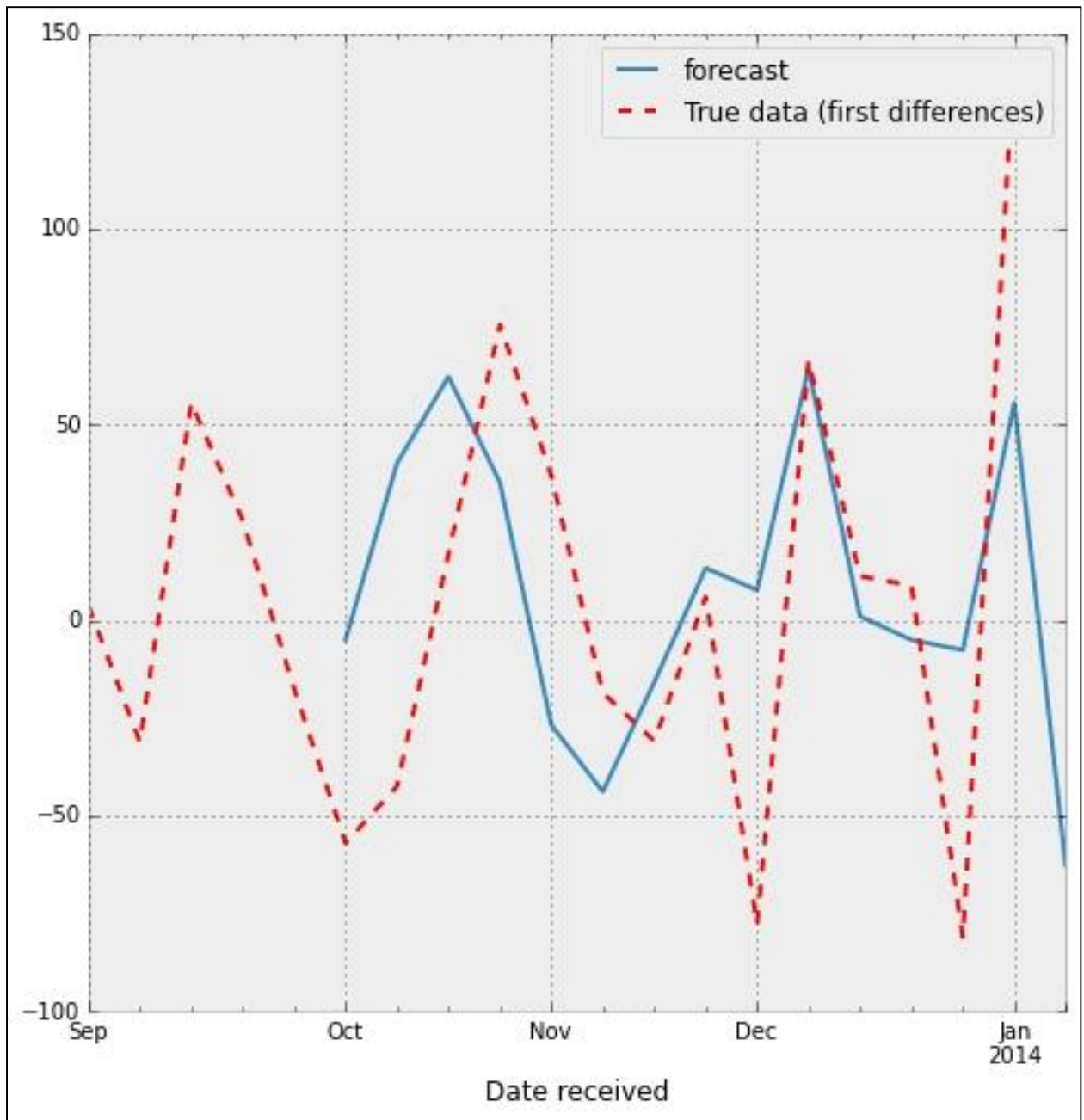
	Real	Imaginary	Modulus	Frequency
MA.1	1.3800	+0.0000j	1.3800	0.0000

Autocorrelation of the residuals of the ARIMA(0,1,1) model

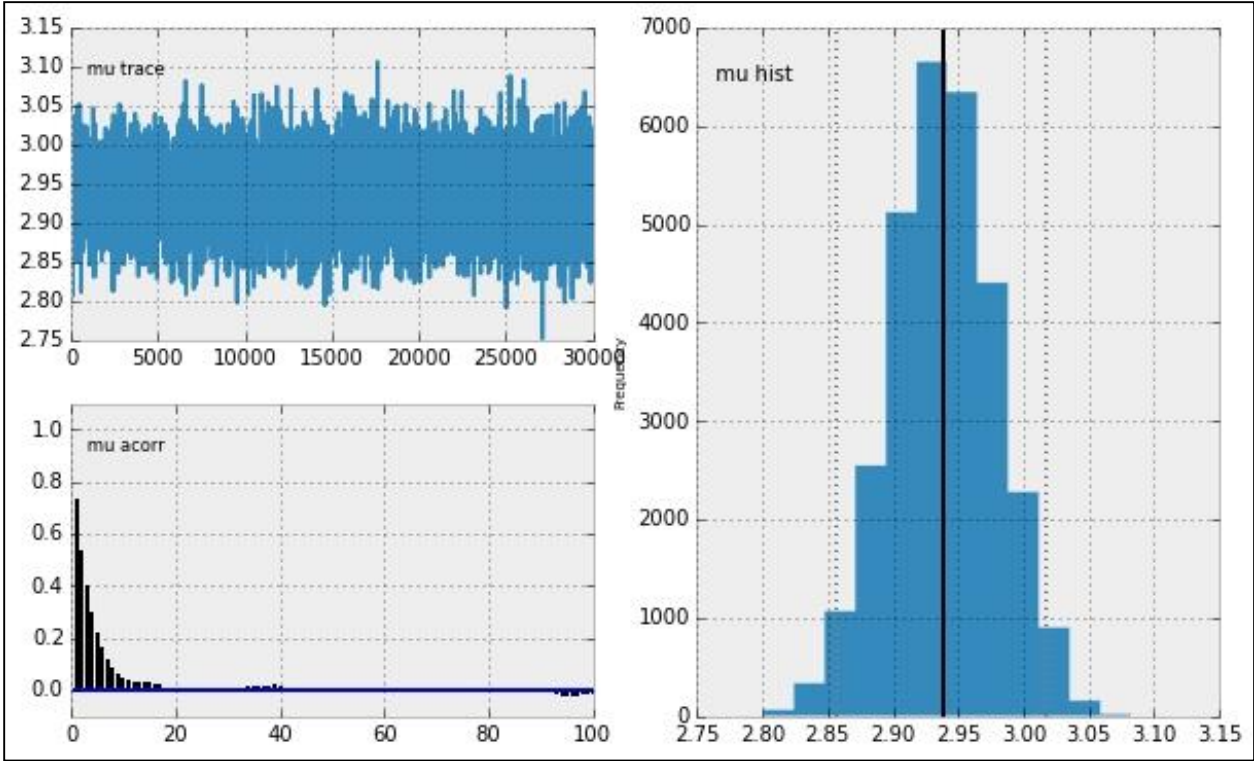


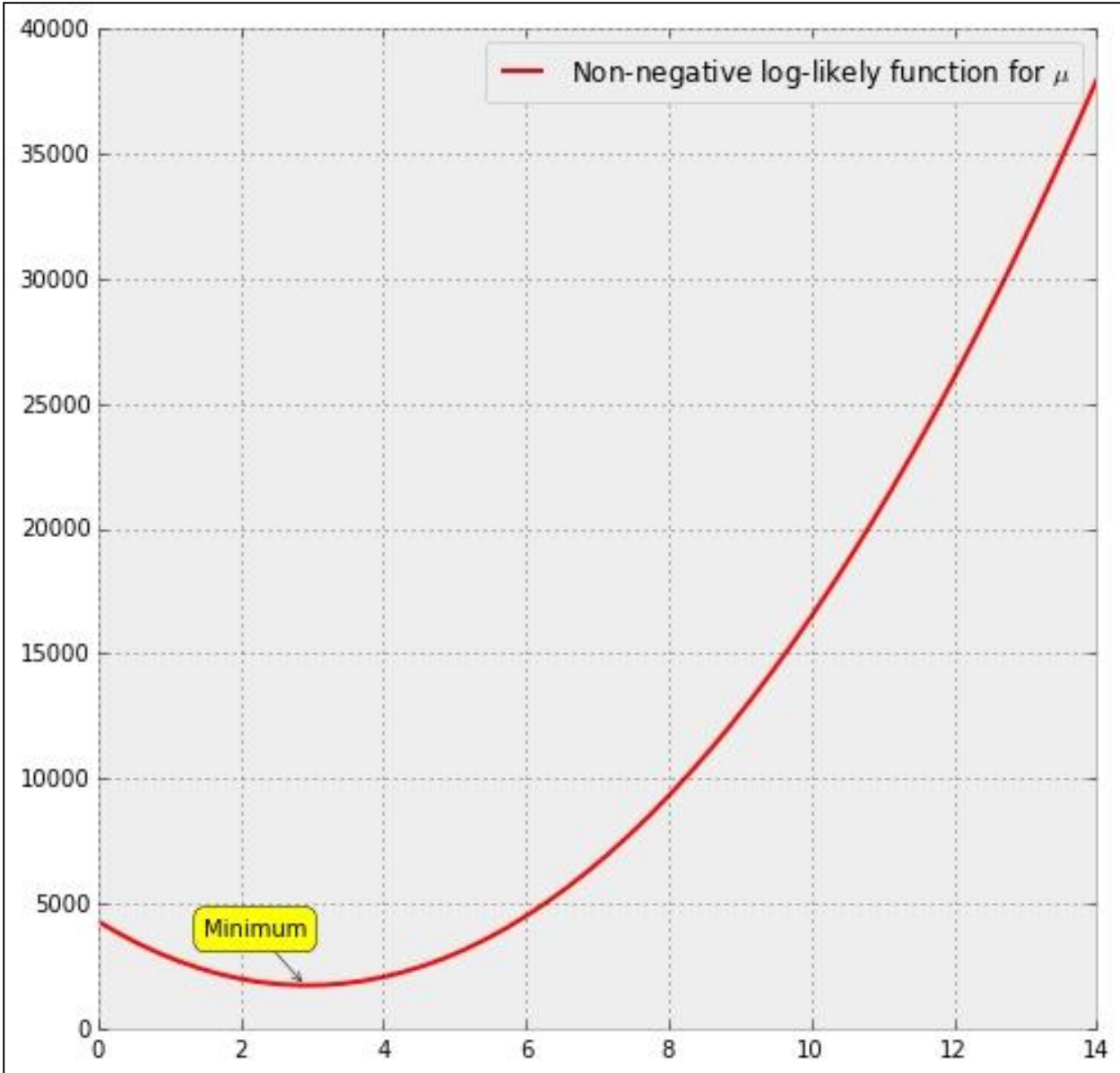
Partial Autocorrelation of the residuals of the ARIMA(0,1,1) model

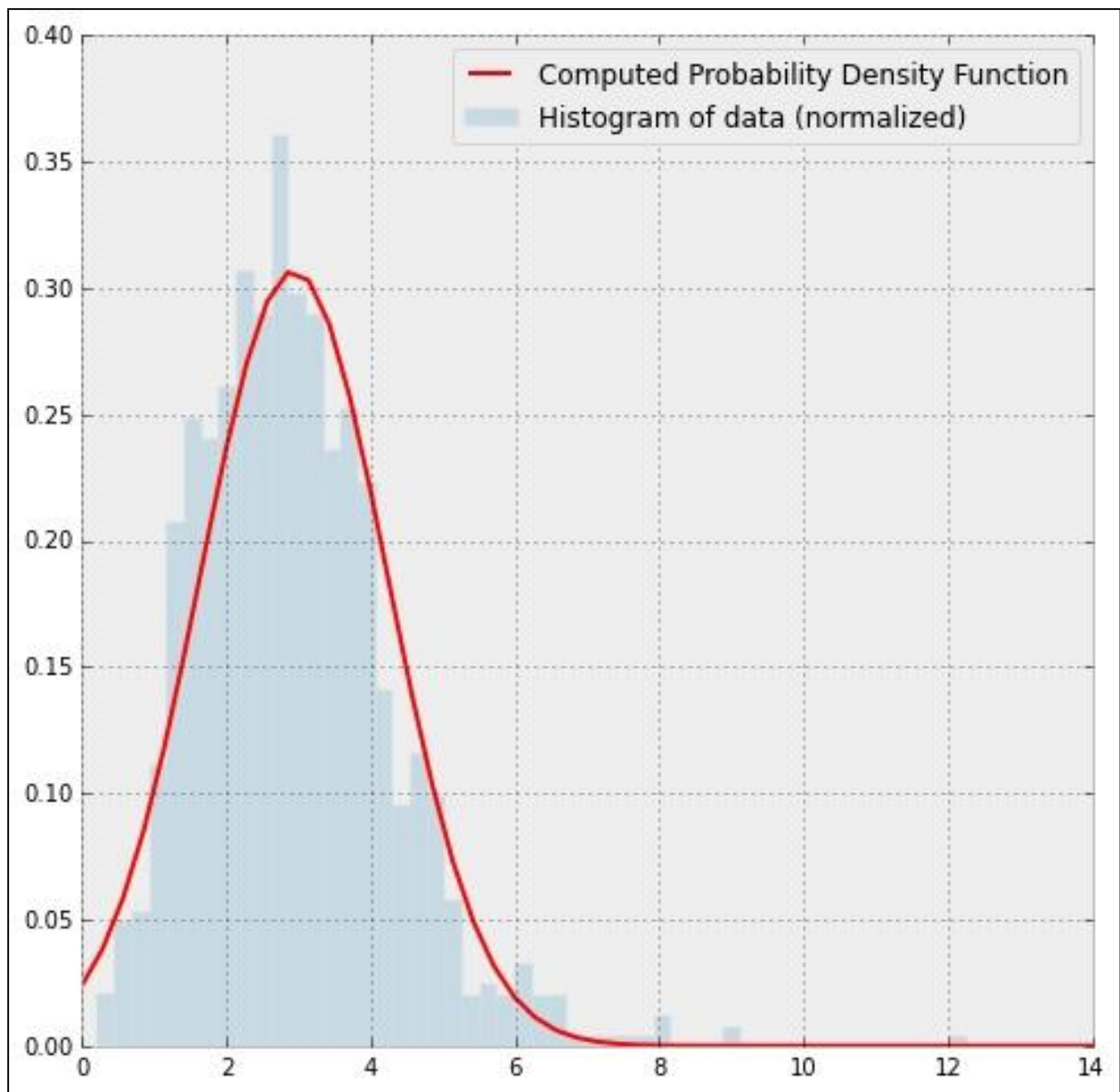


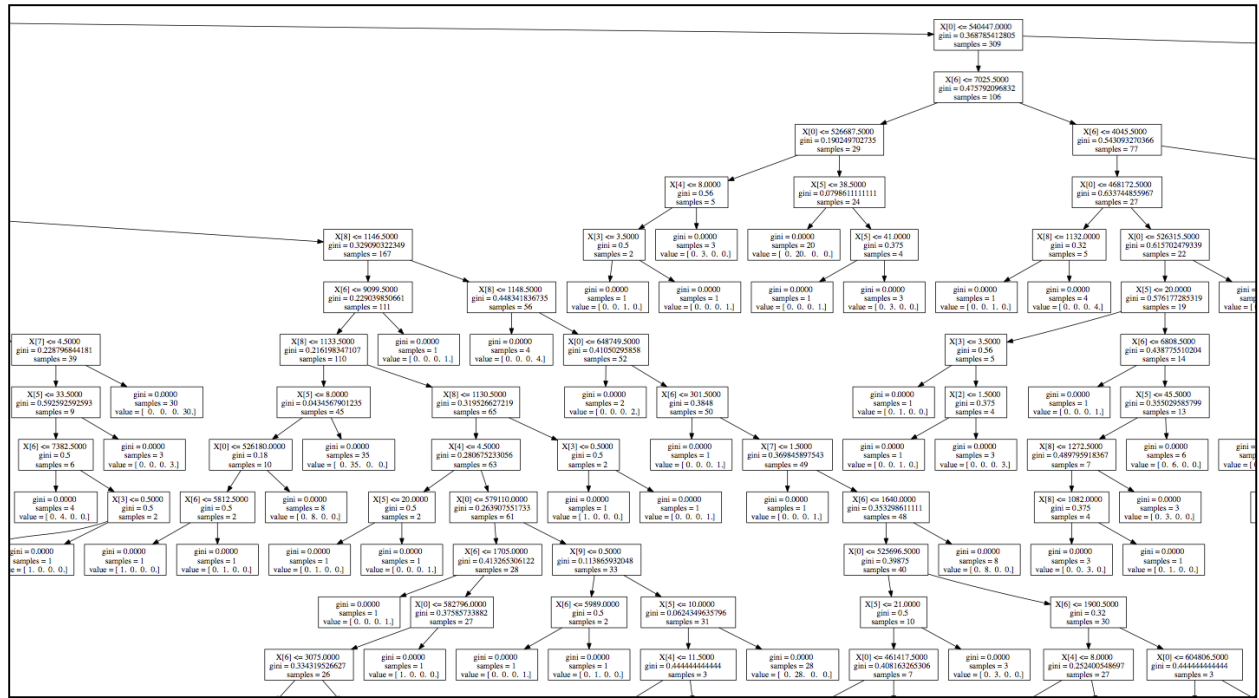


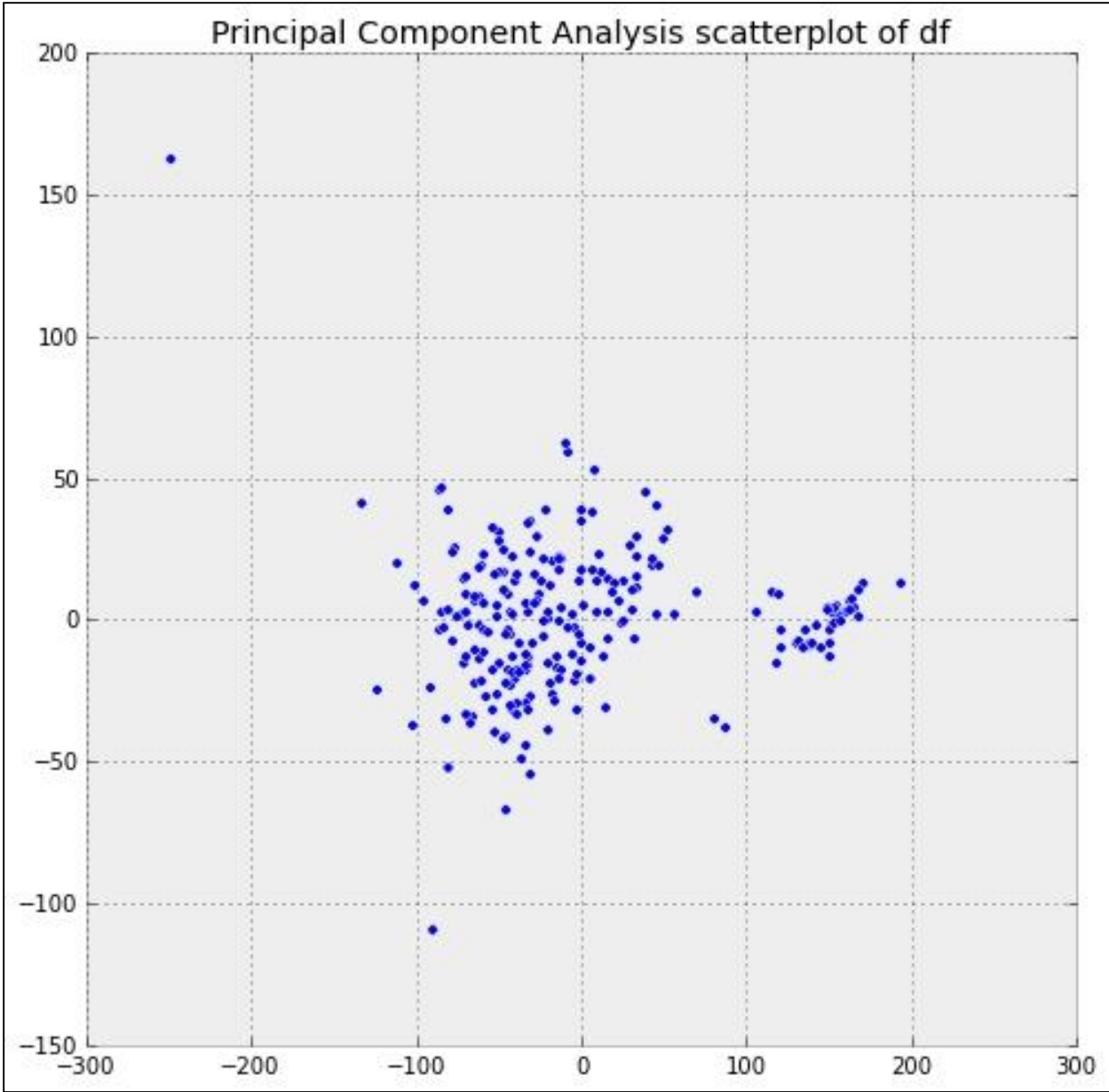
Chapter 8: Inference and Data Analysis

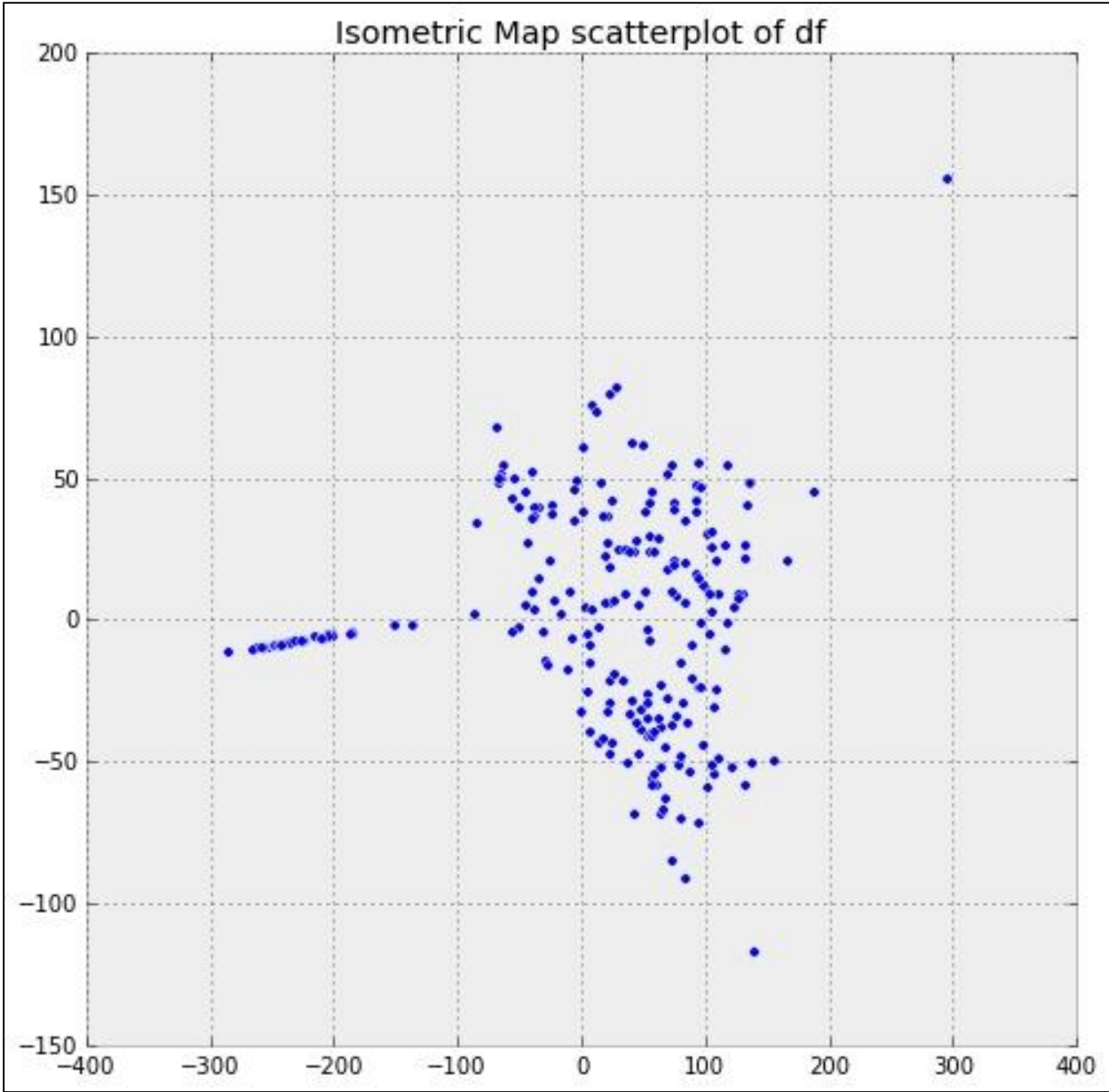


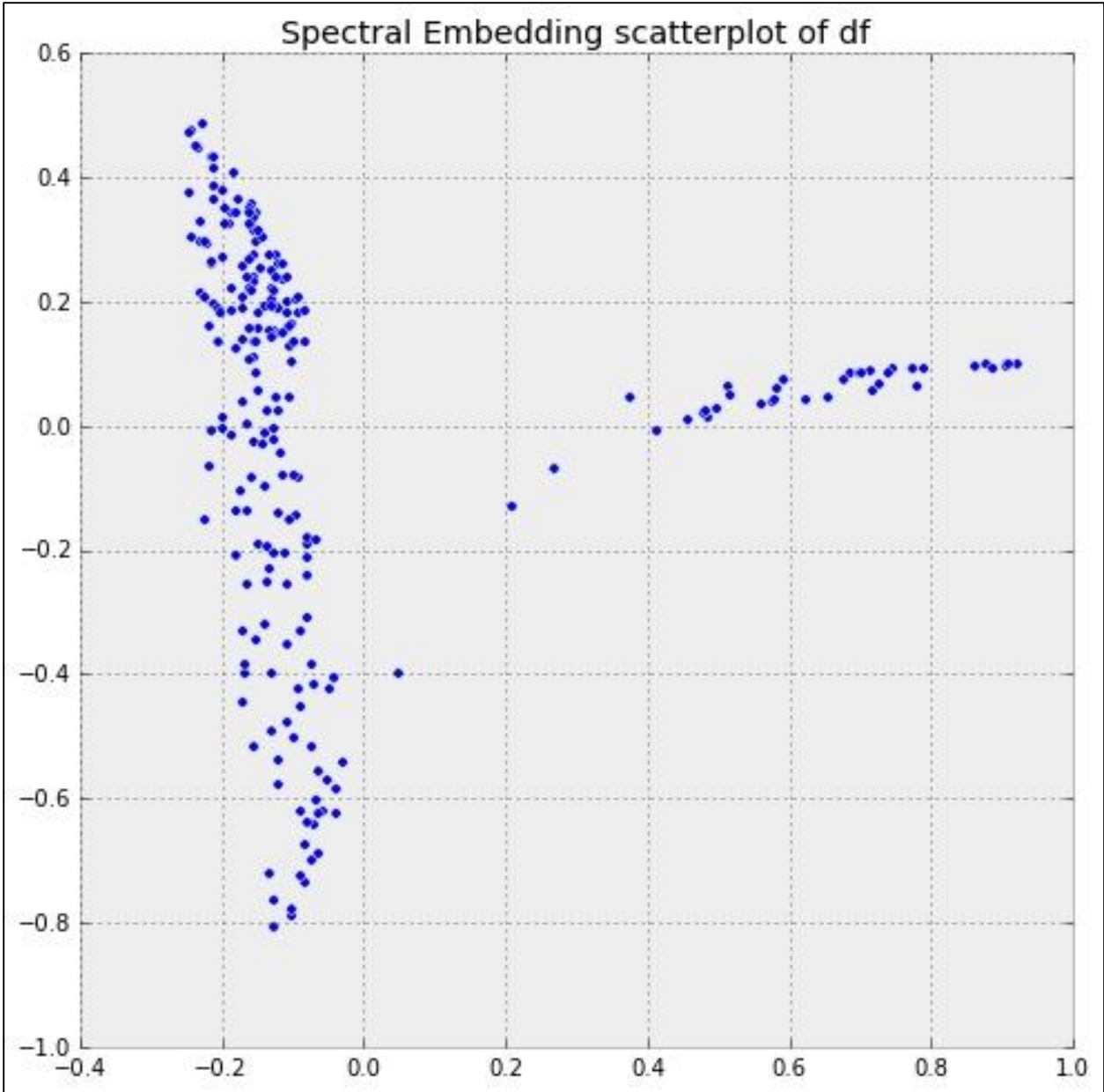




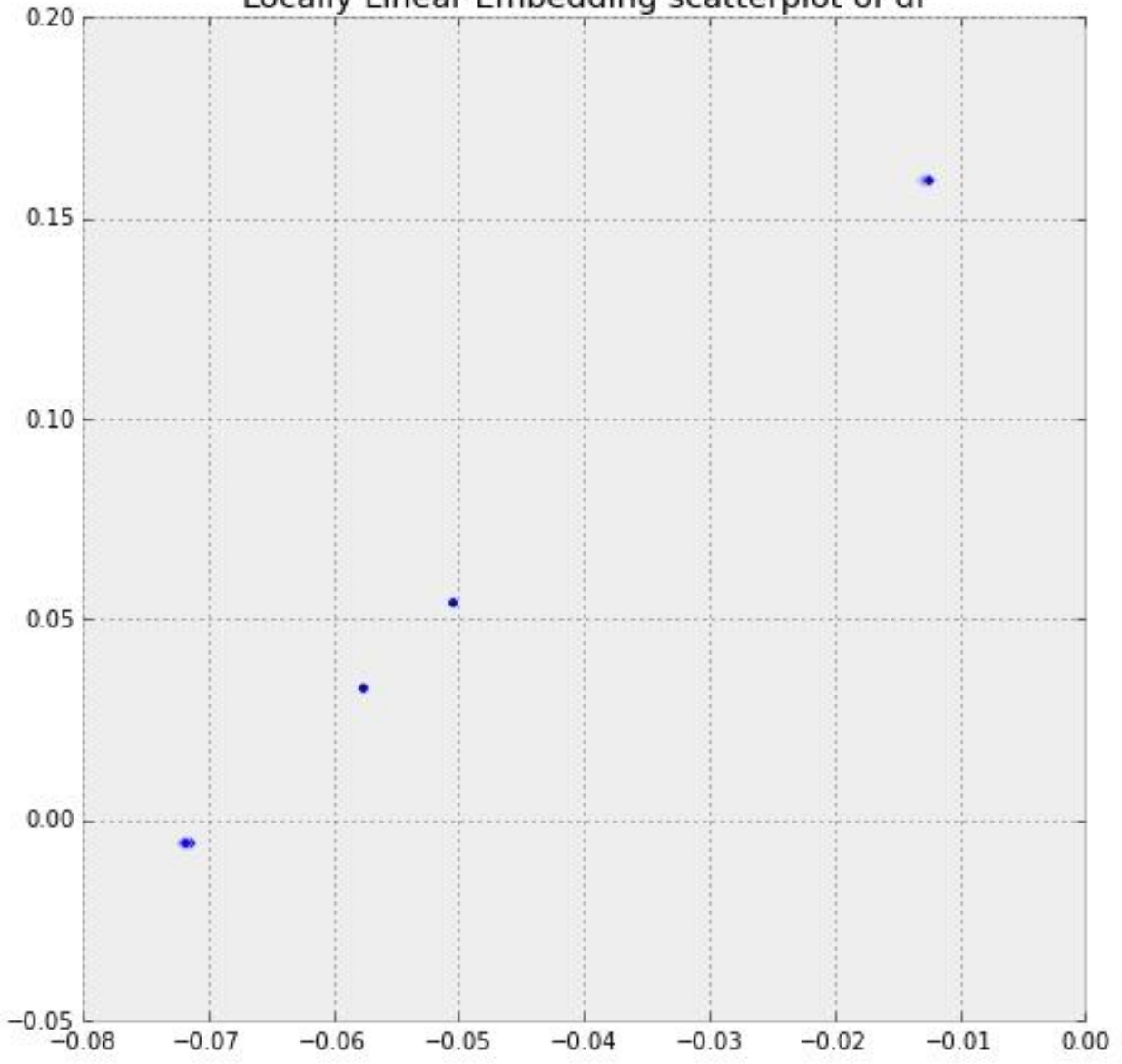




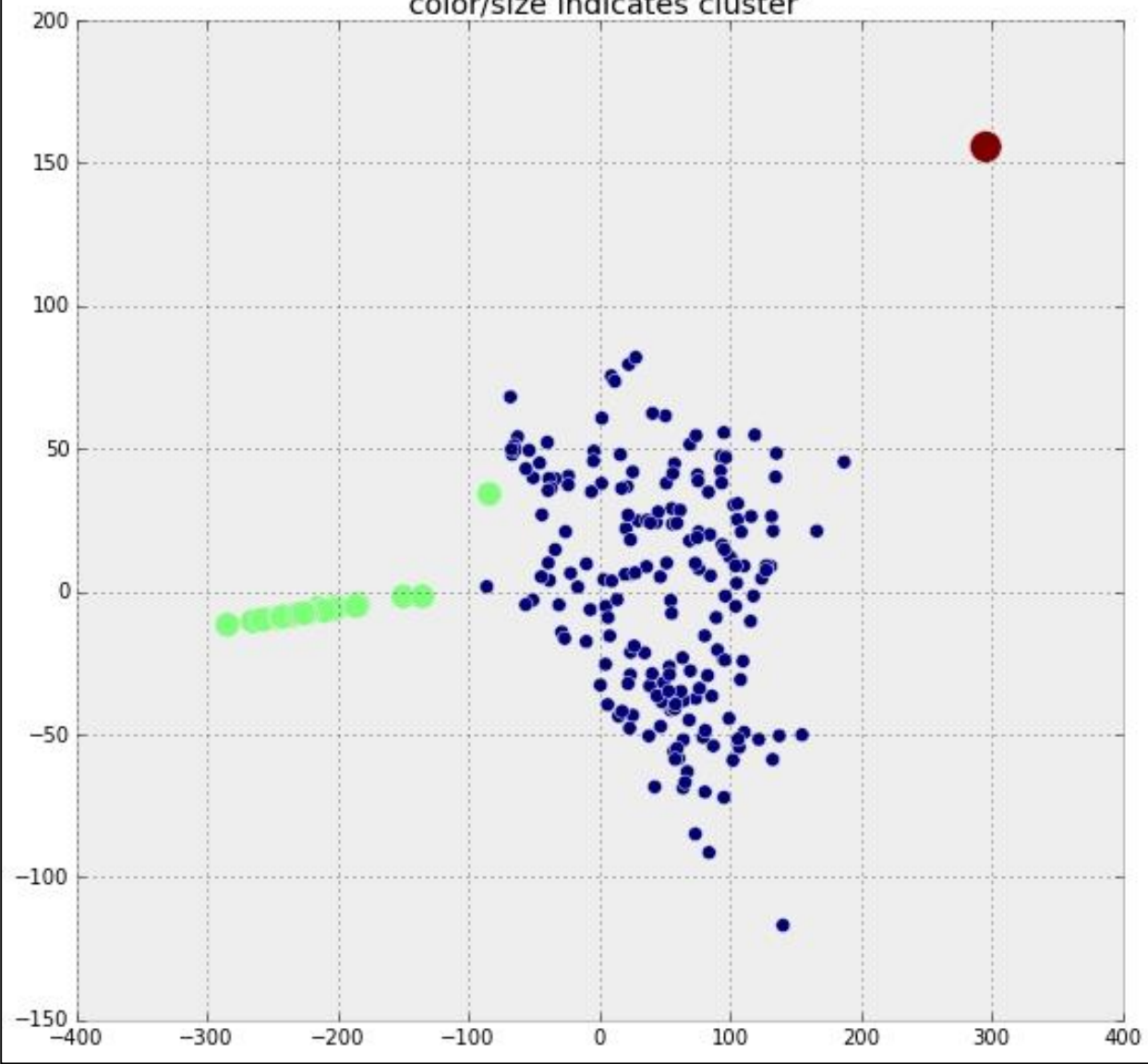


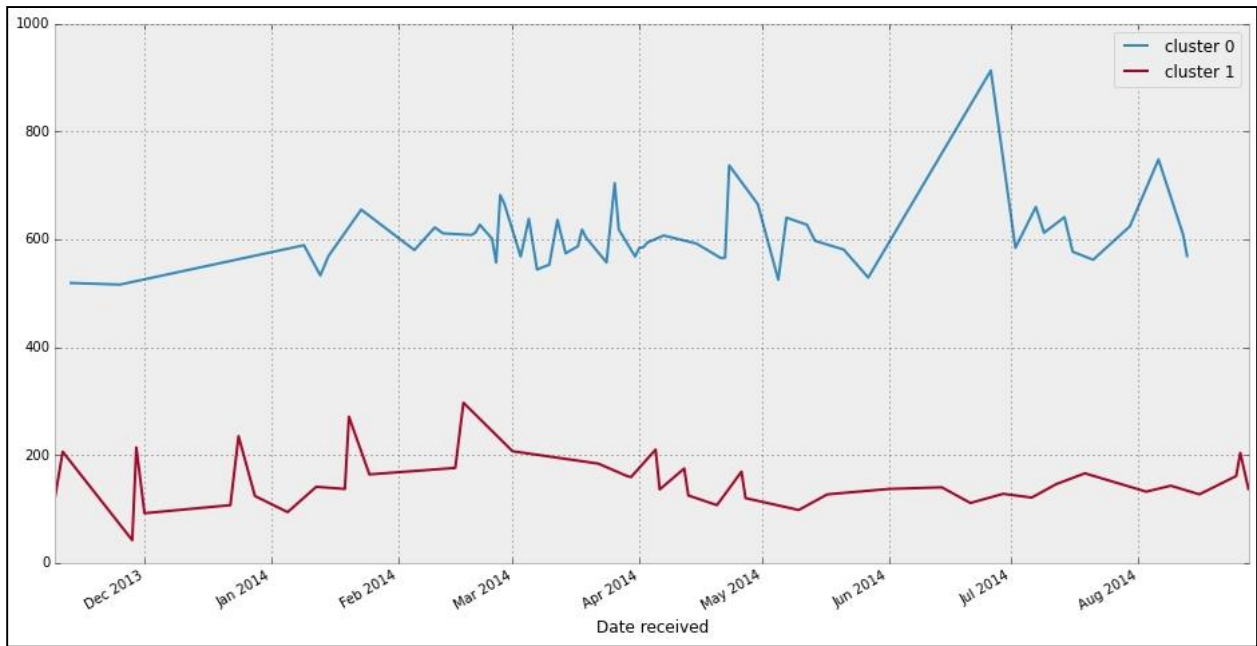
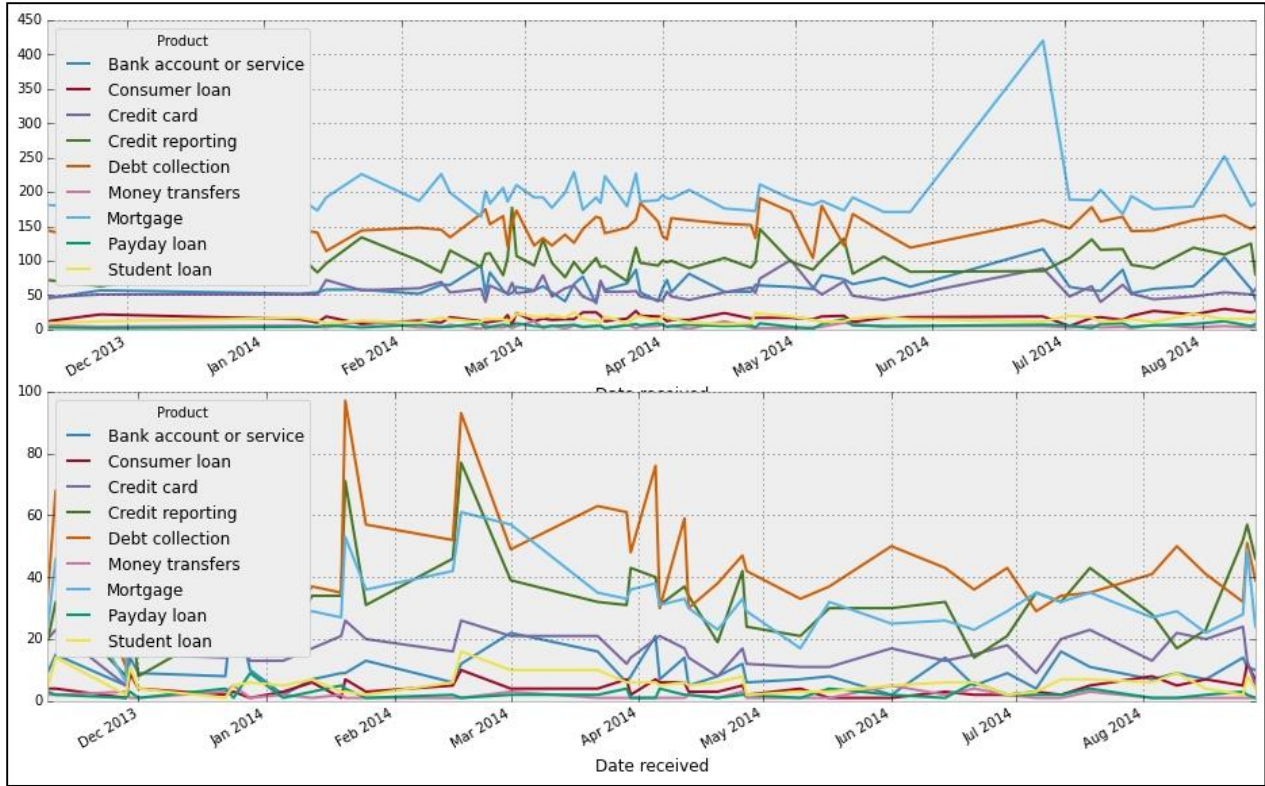


Locally Linear Embedding scatterplot of df

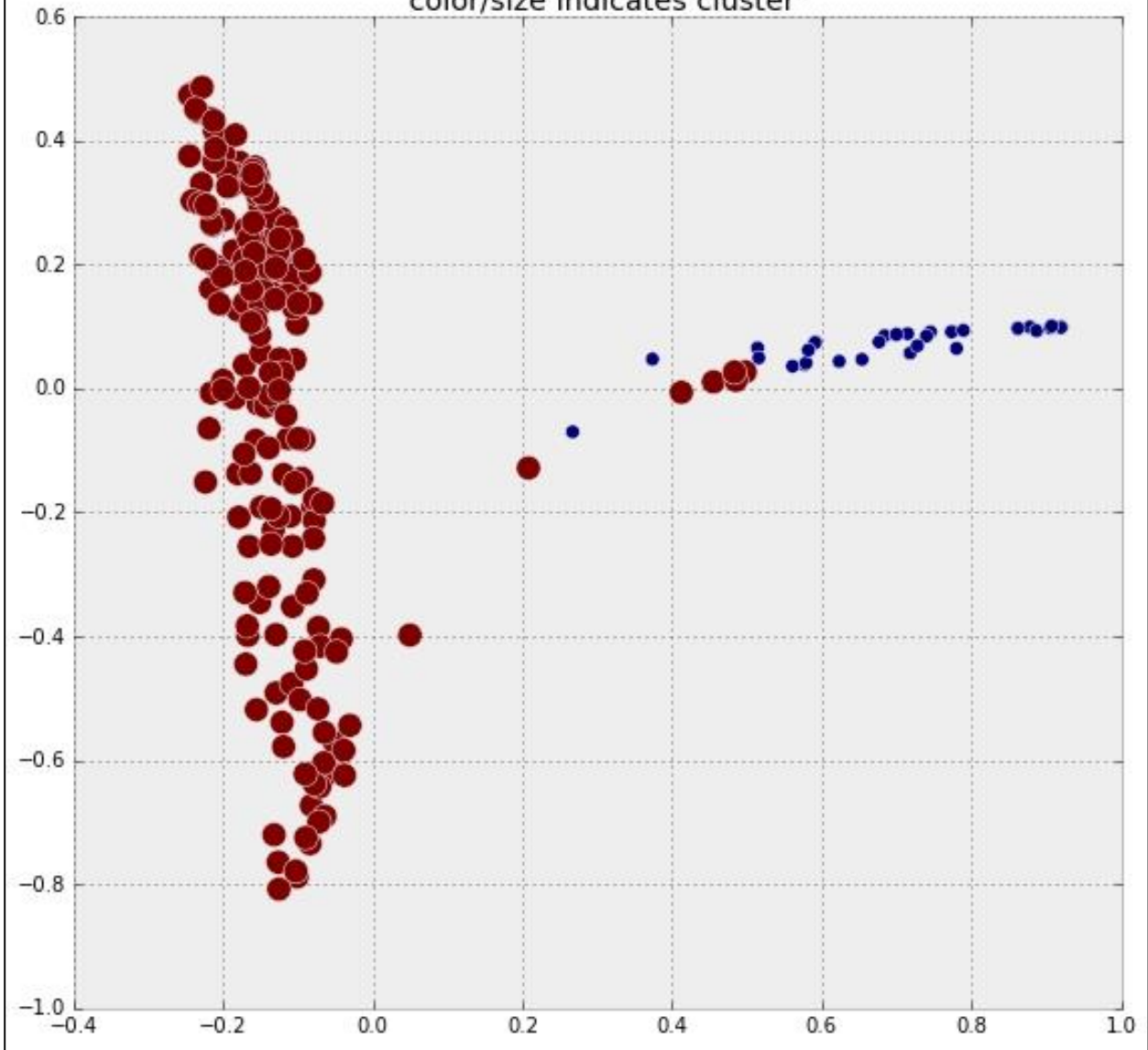


MeanShift clustering of df
Isometric Mapping scatterplot
color/size indicates cluster

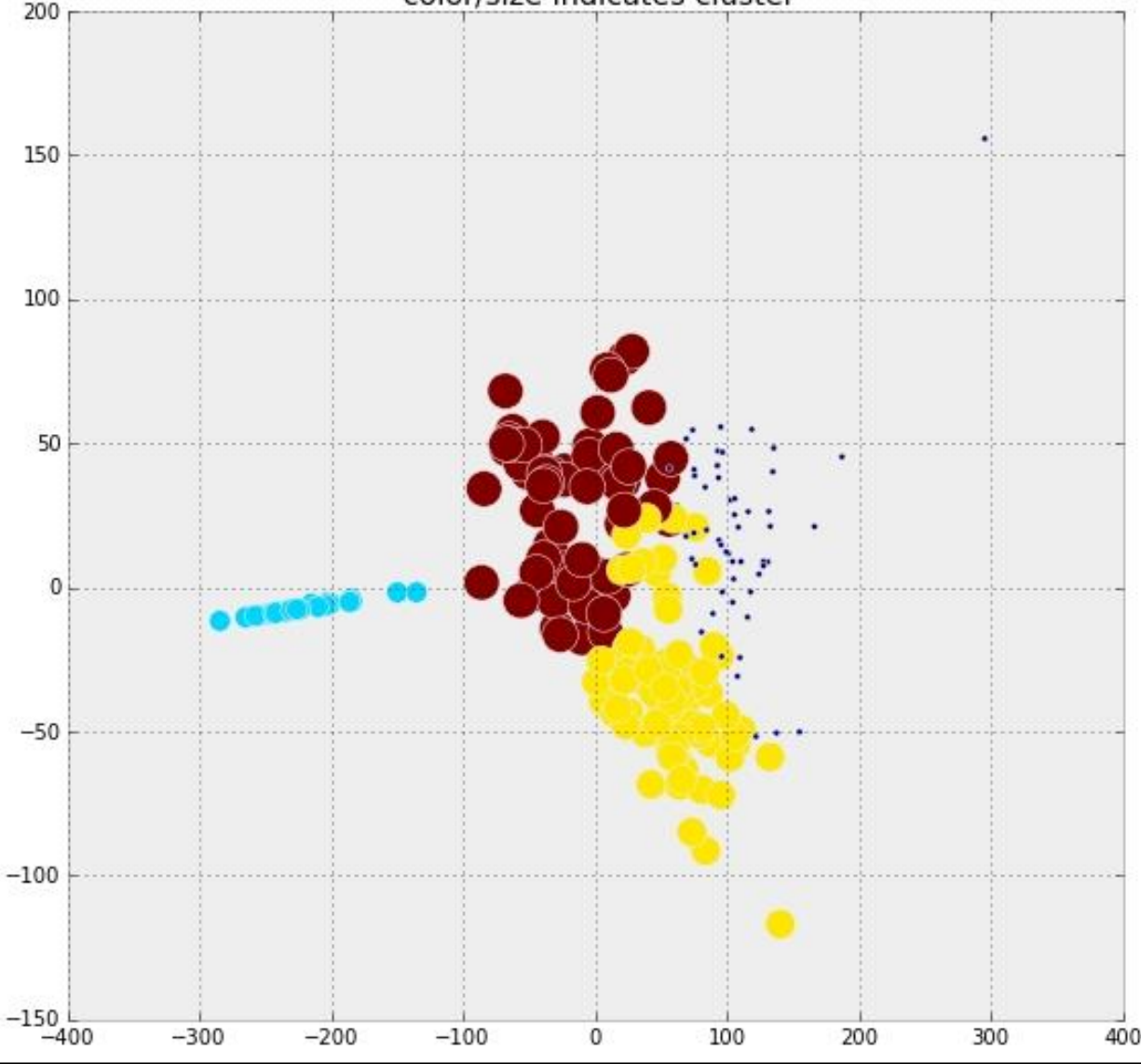


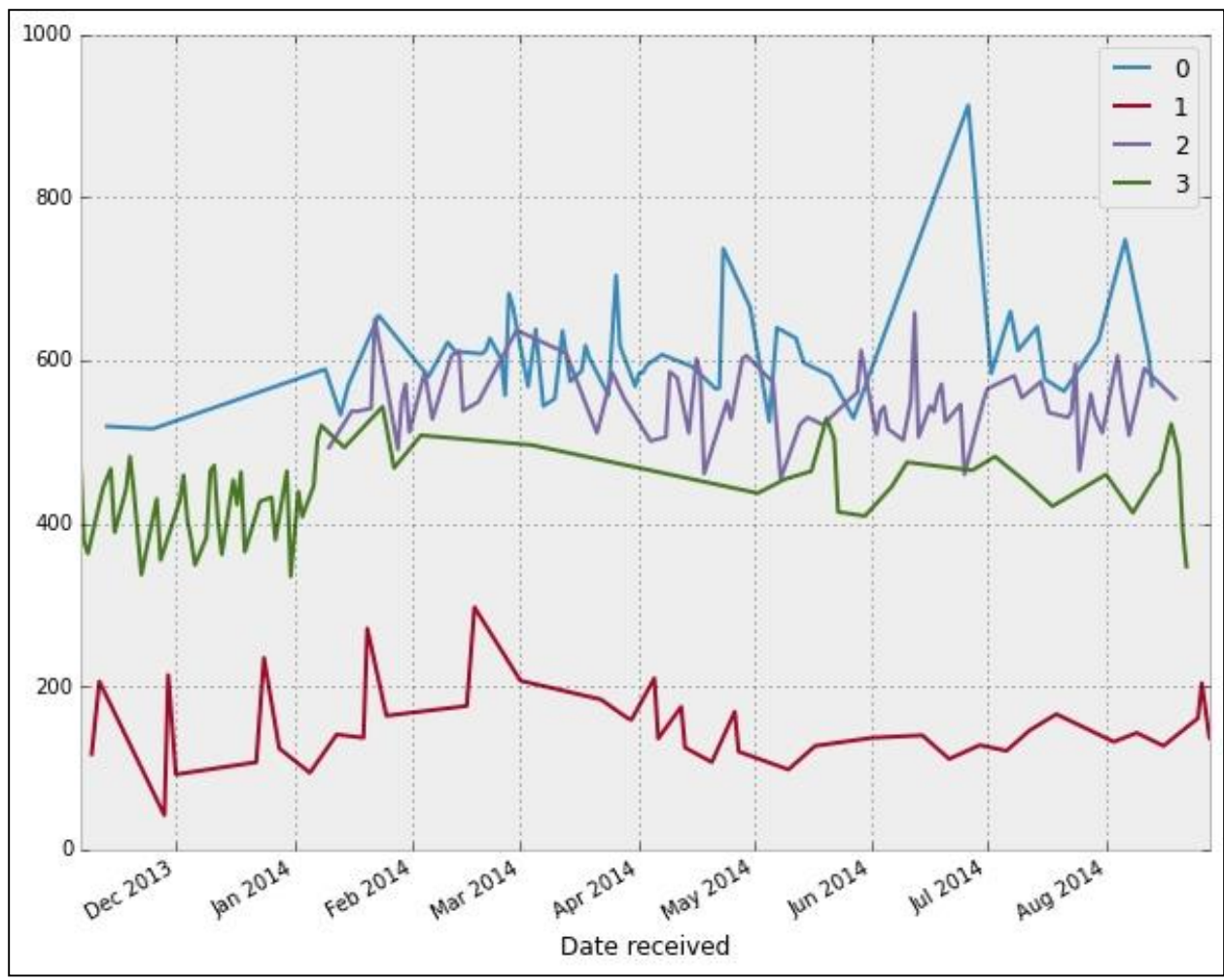


VBGMM clustering of df
Spectral Embedding scatterplot
color/size indicates cluster

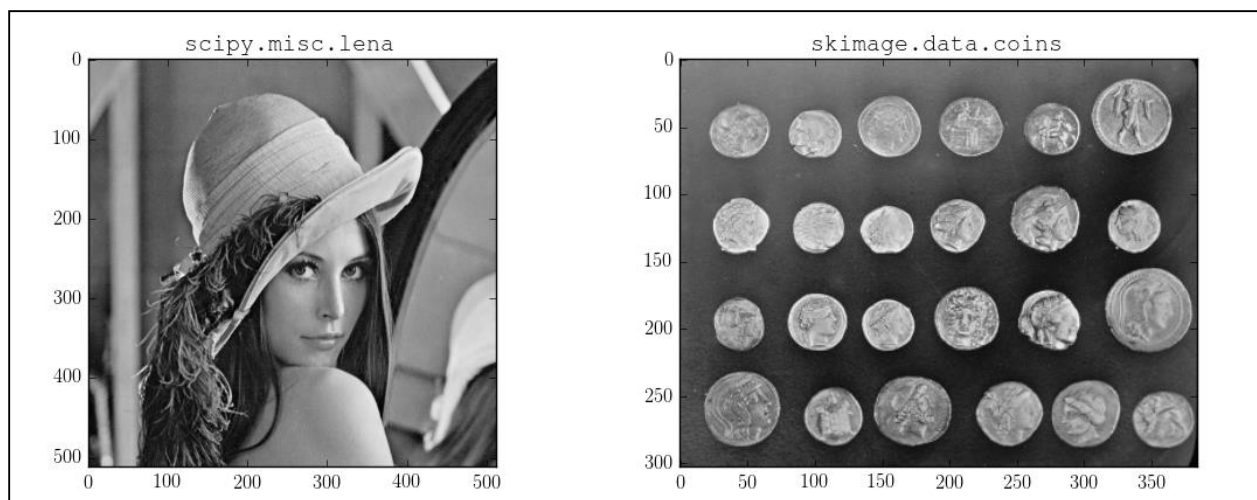
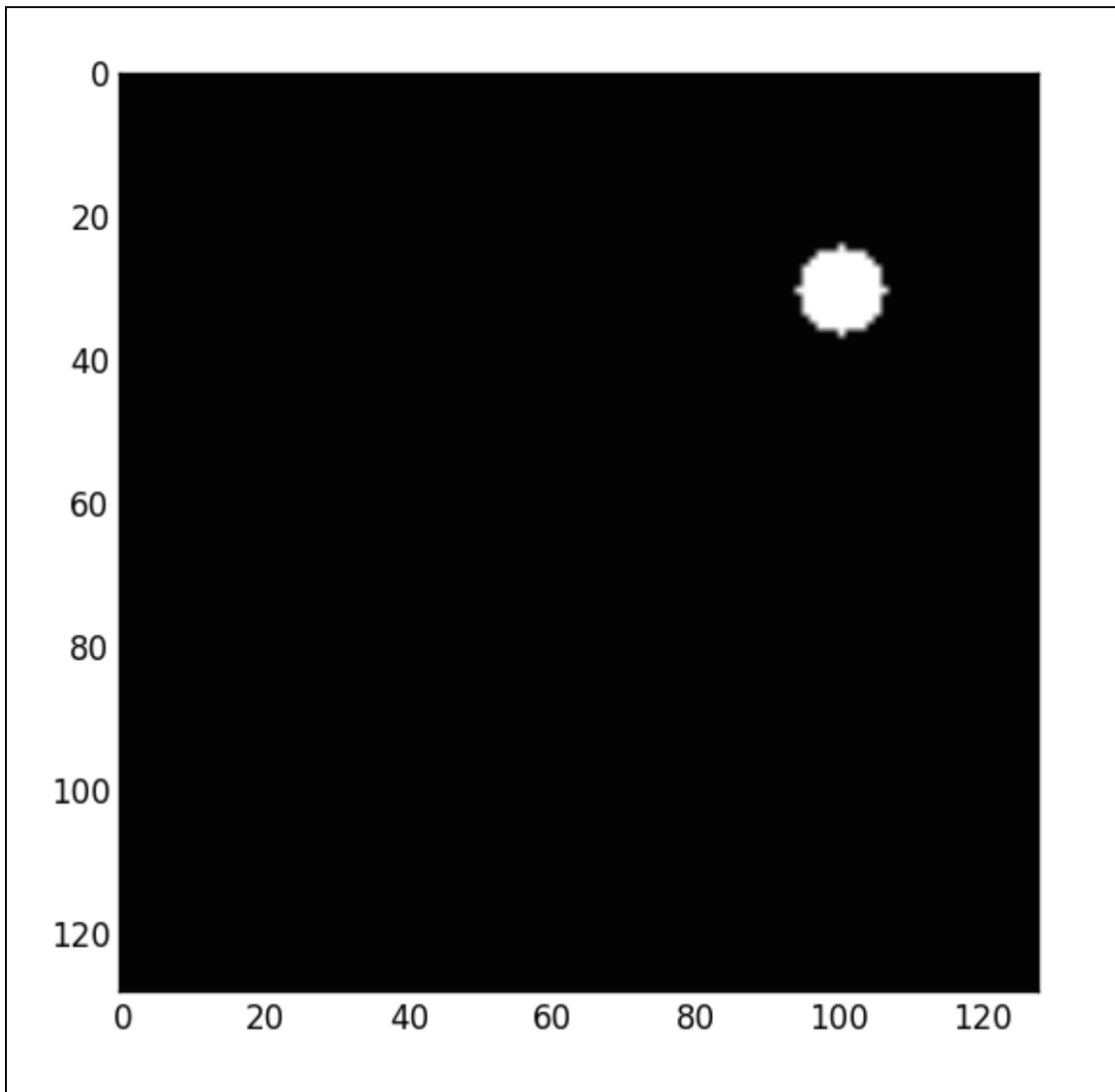


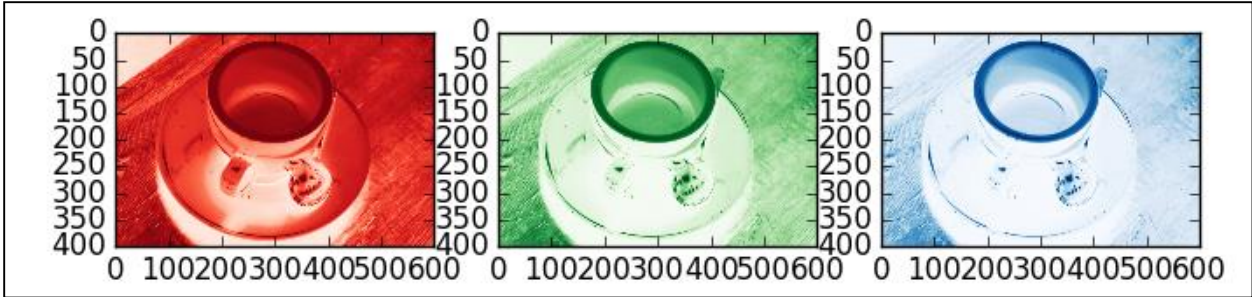
KMeans clustering of df
Isometric Mapping scatterplot
color/size indicates cluster

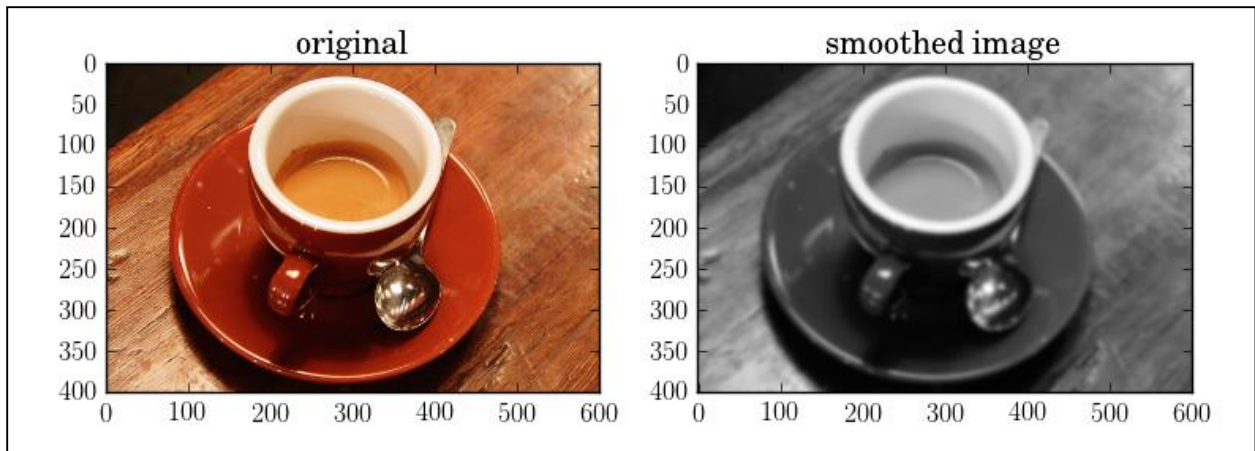
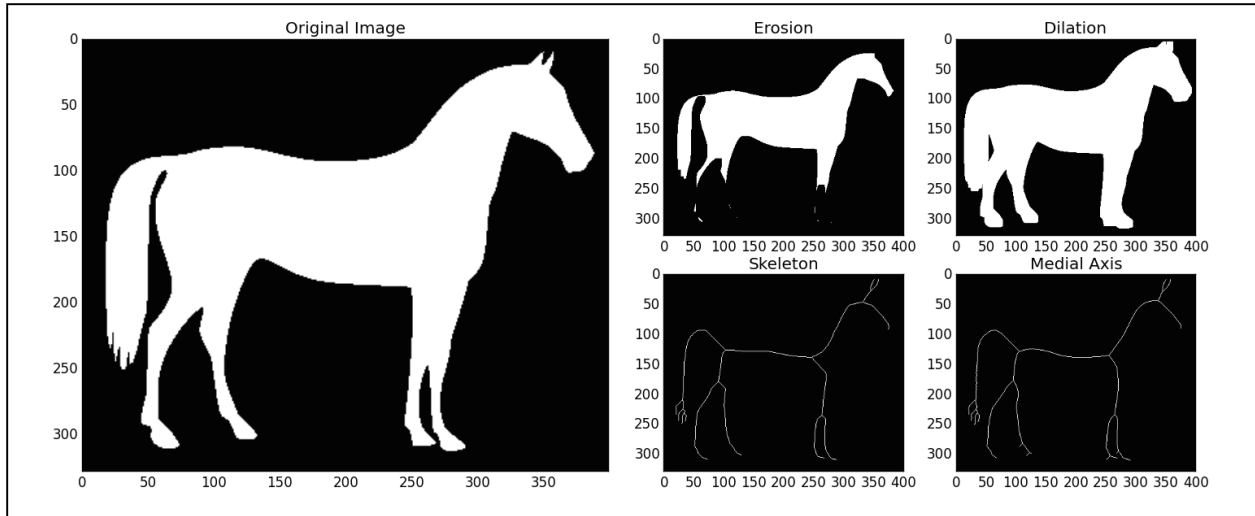
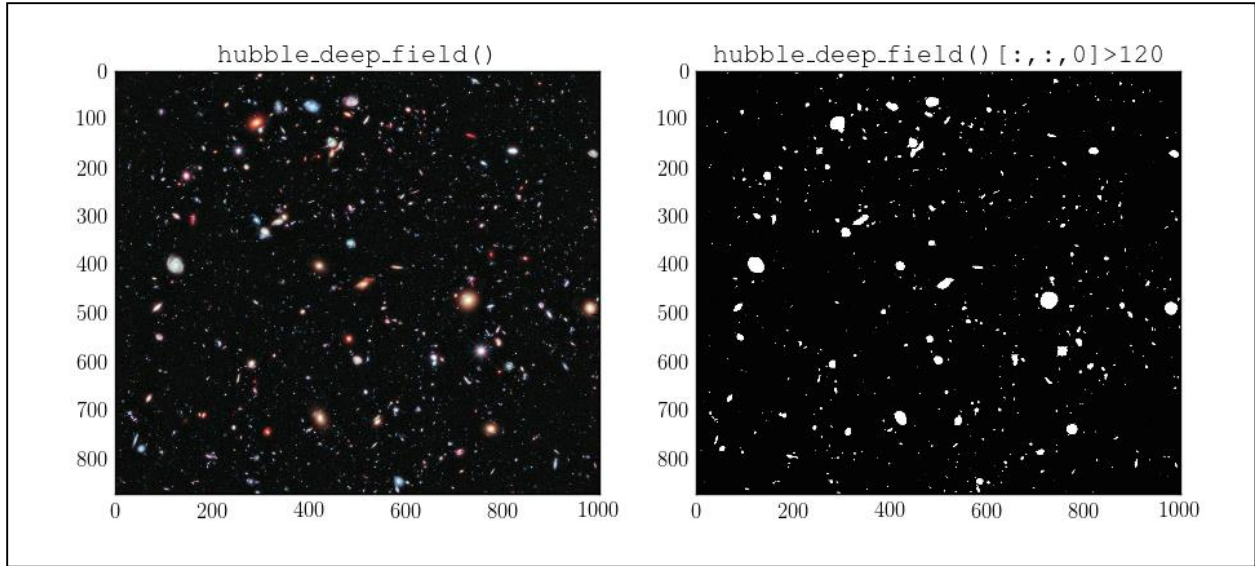


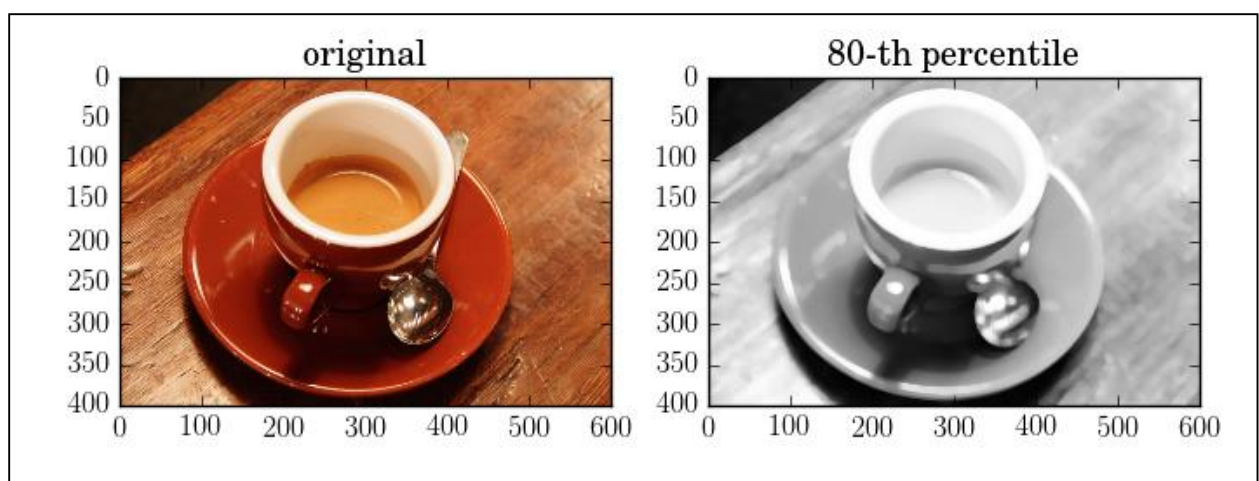
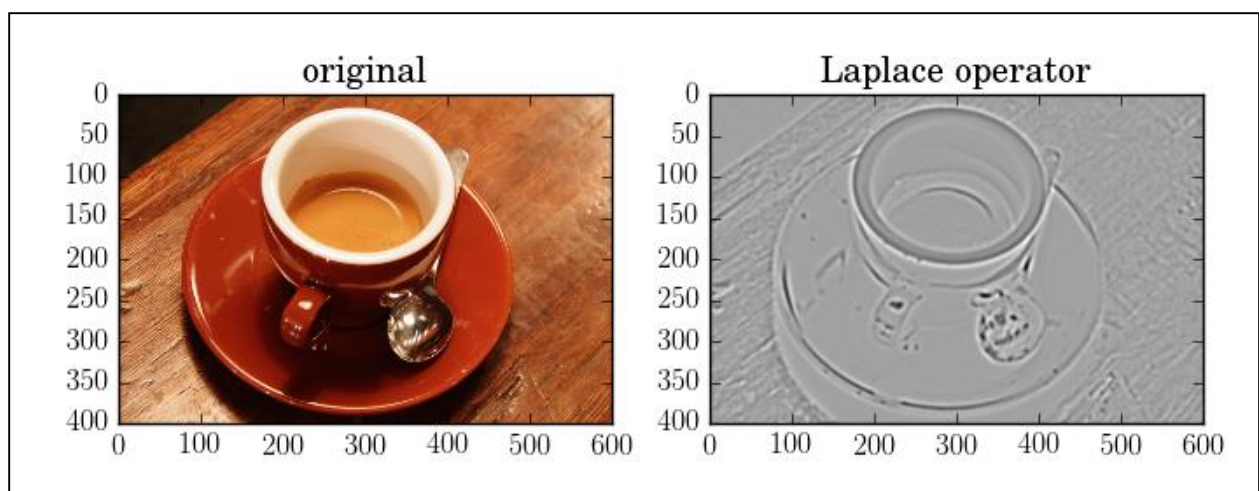
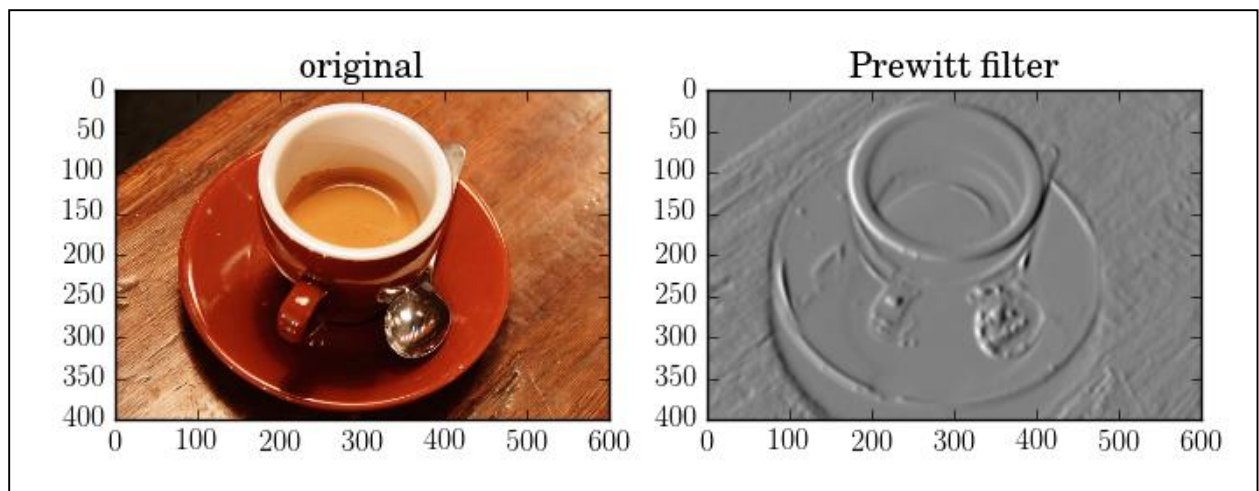


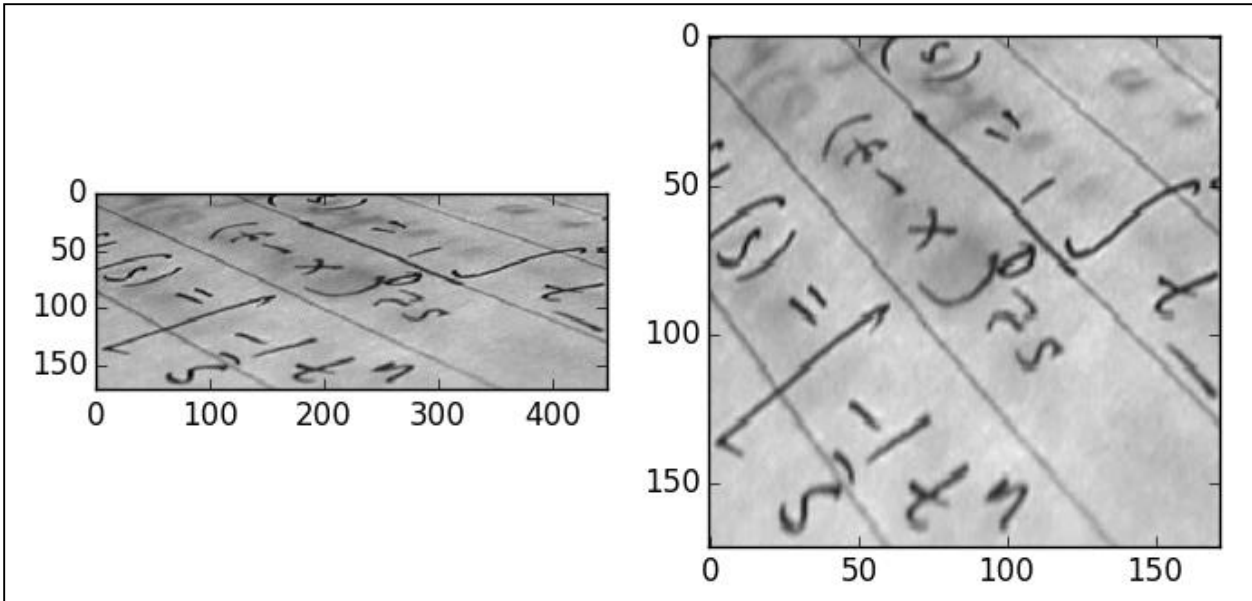
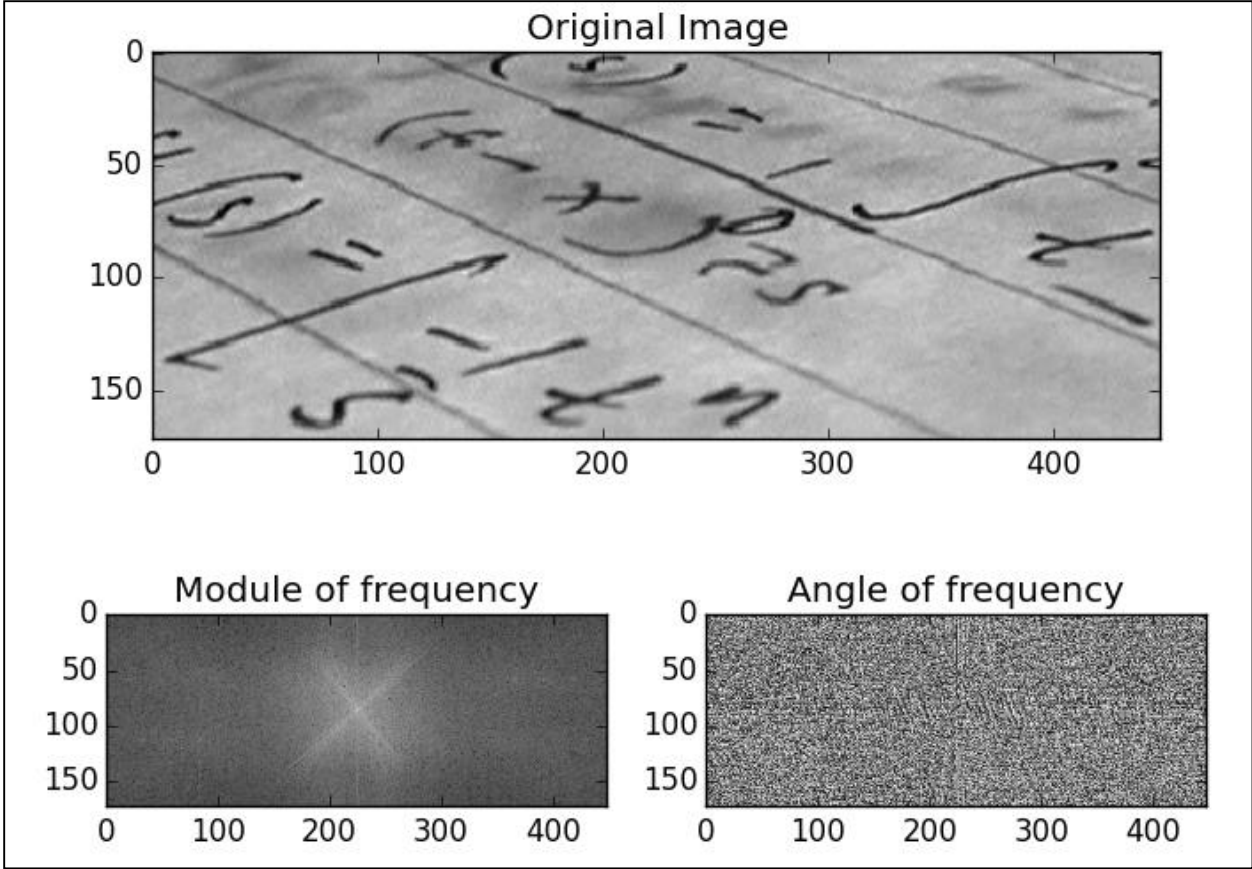
Chapter 9: Mathematical Imaging

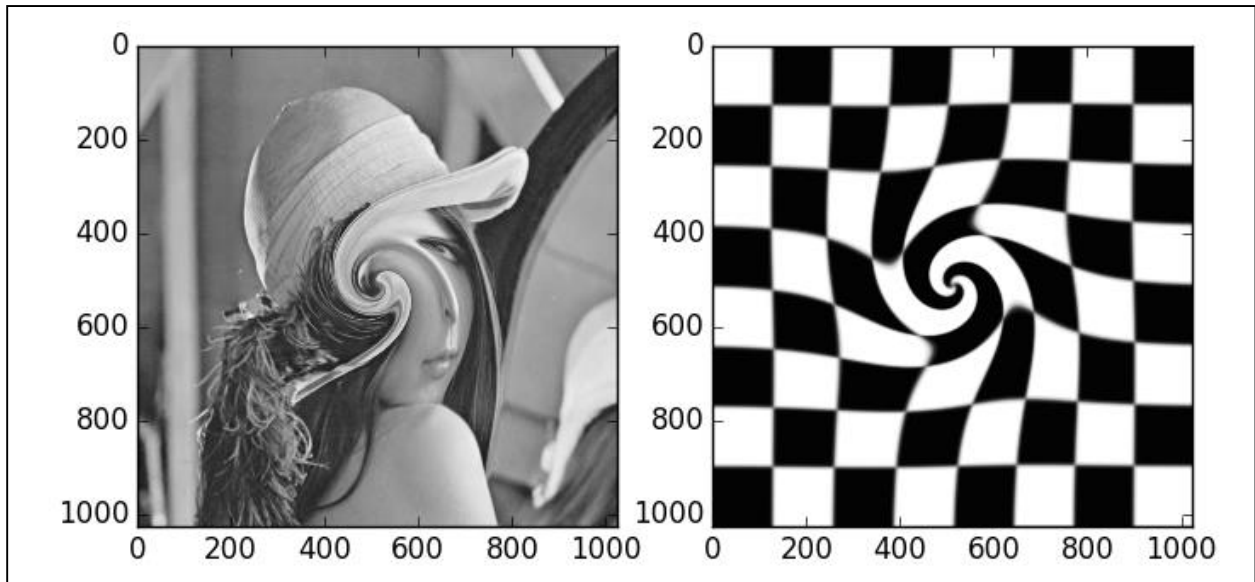
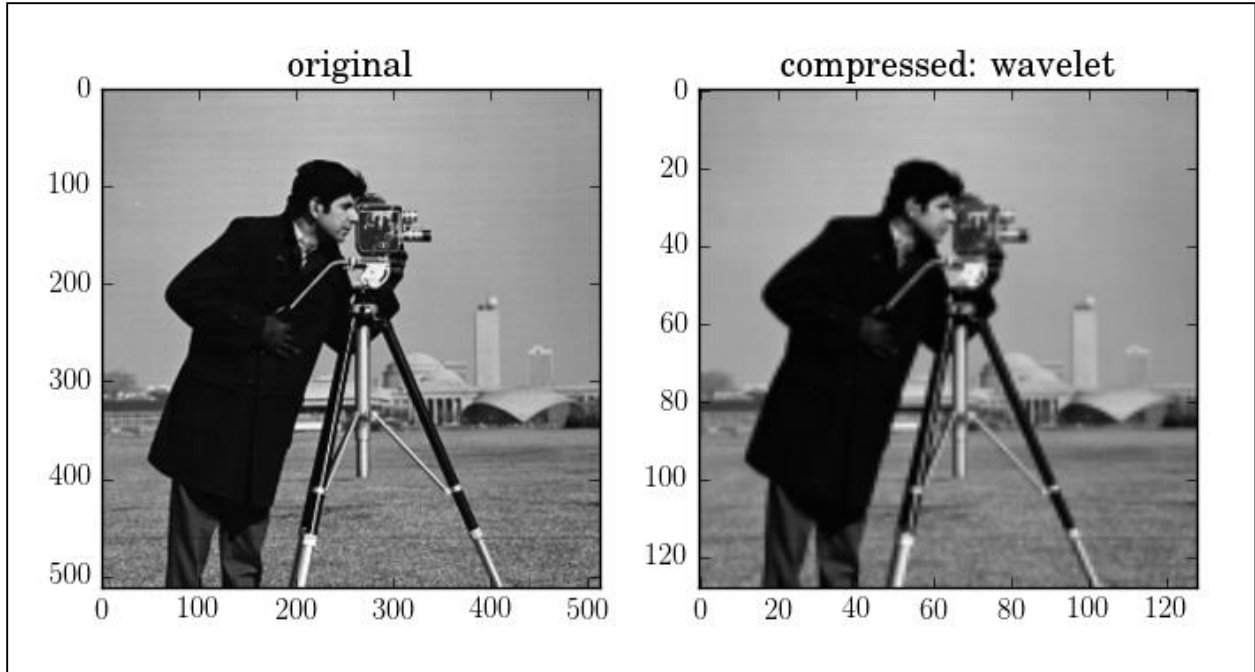
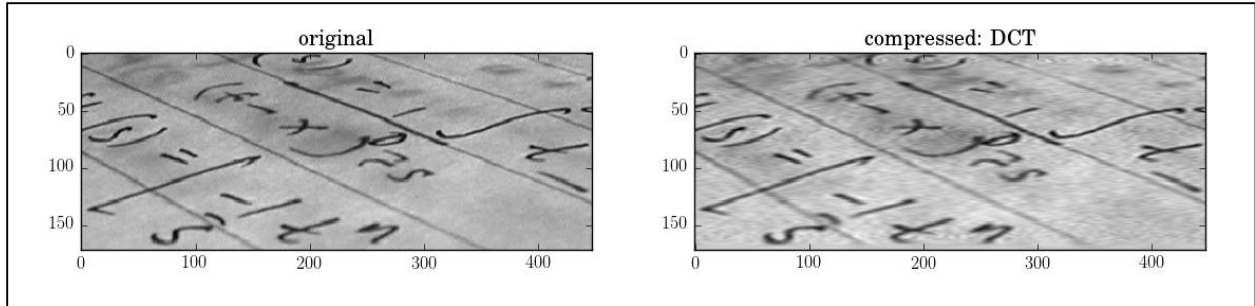


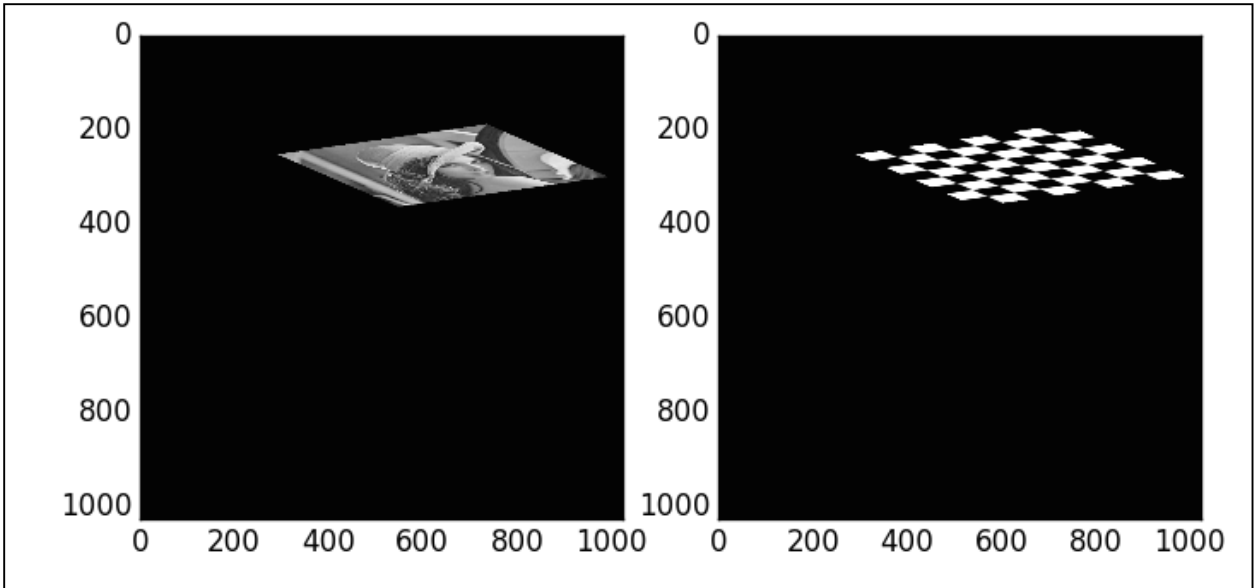
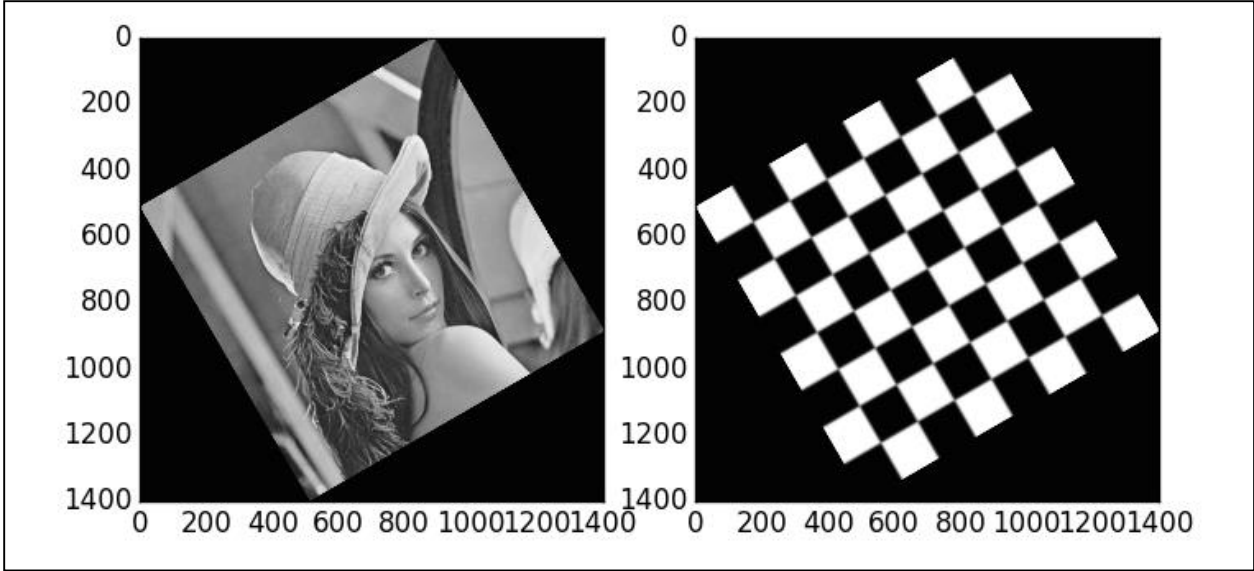


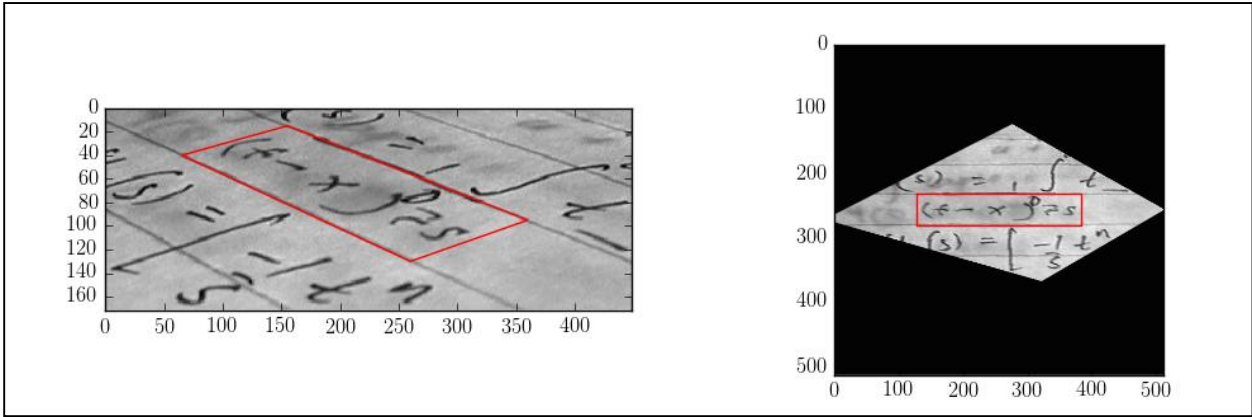
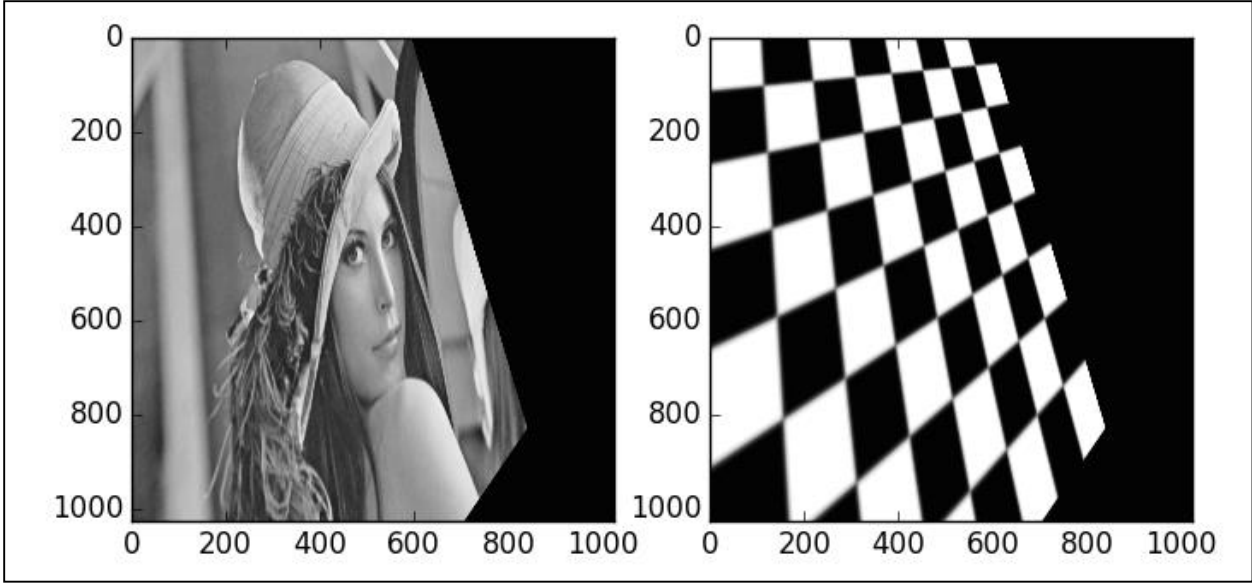


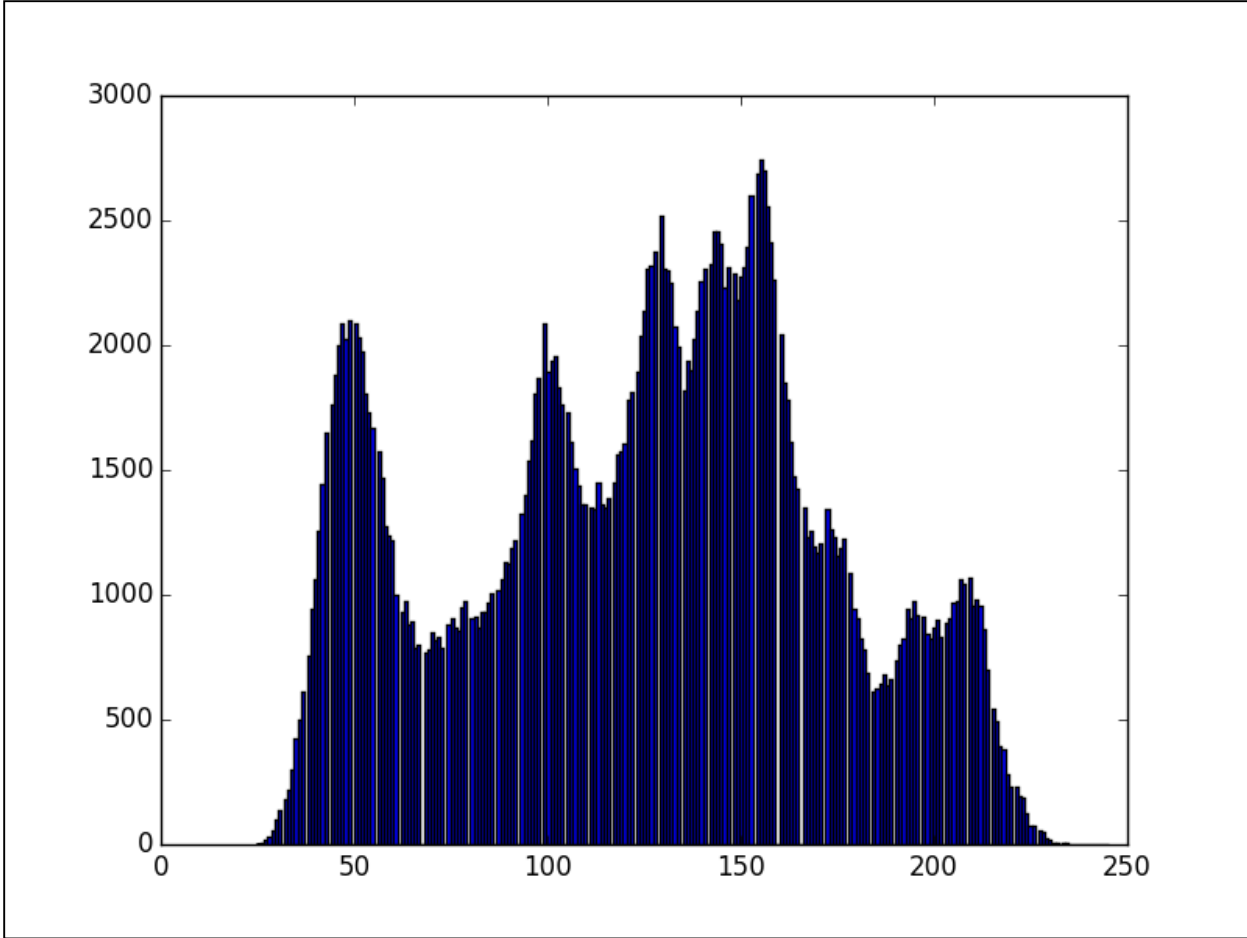


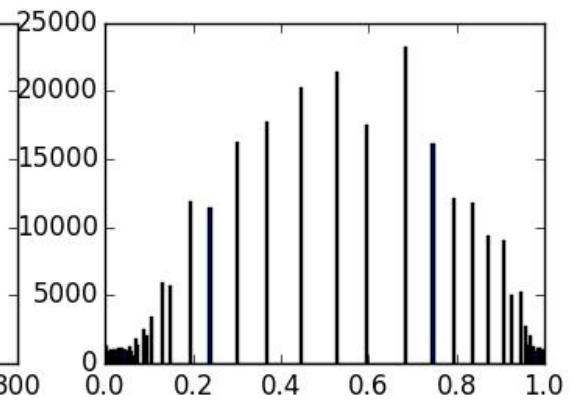
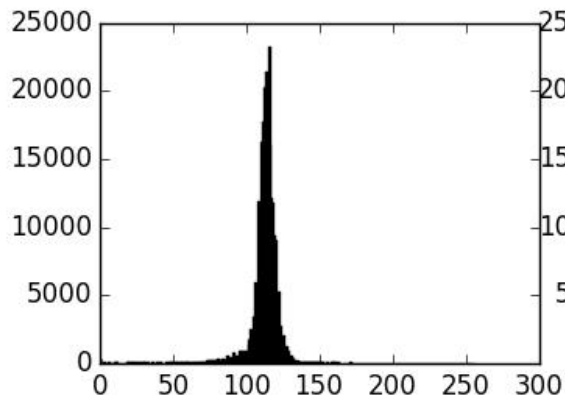
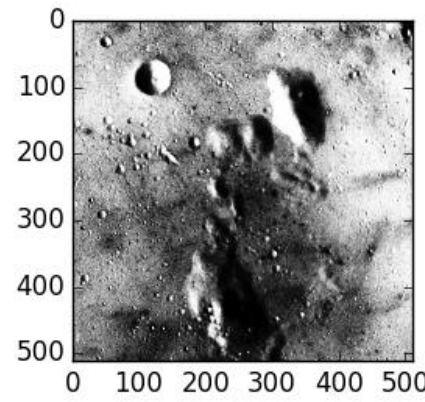
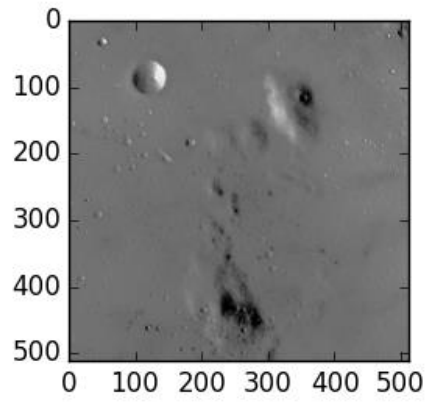


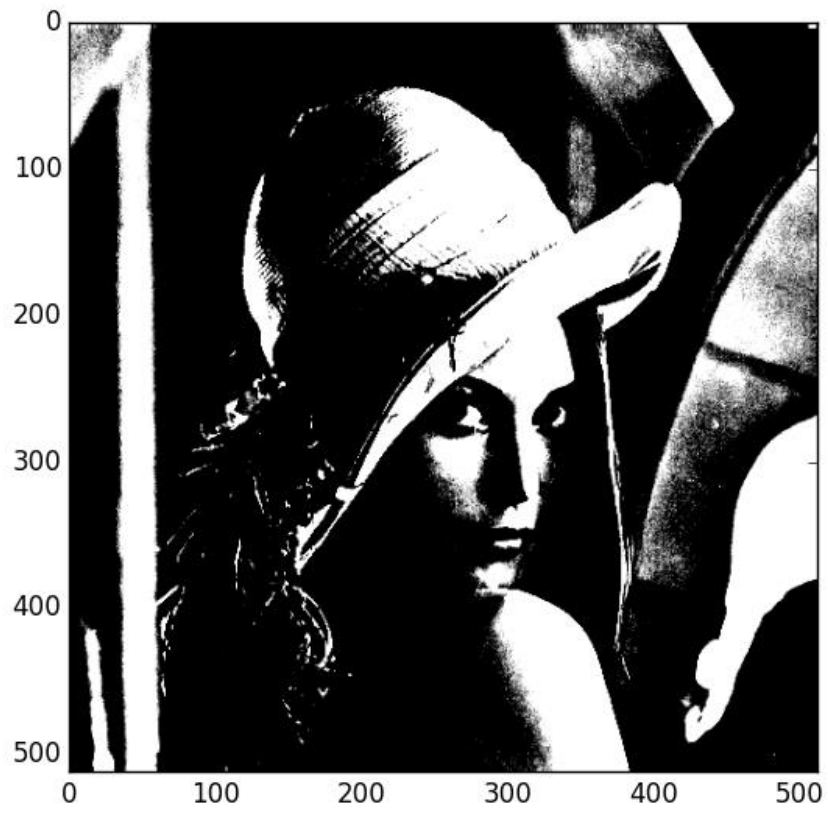


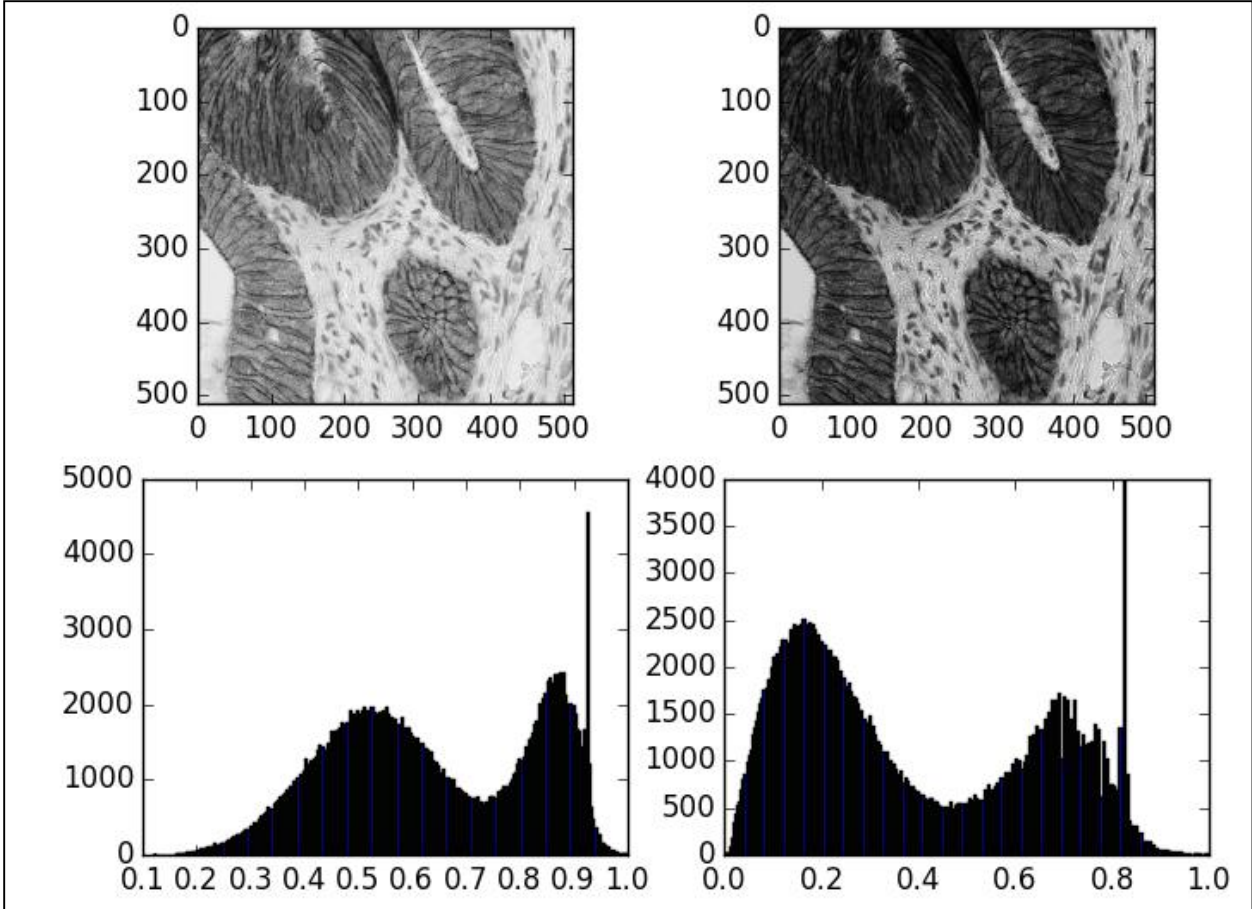


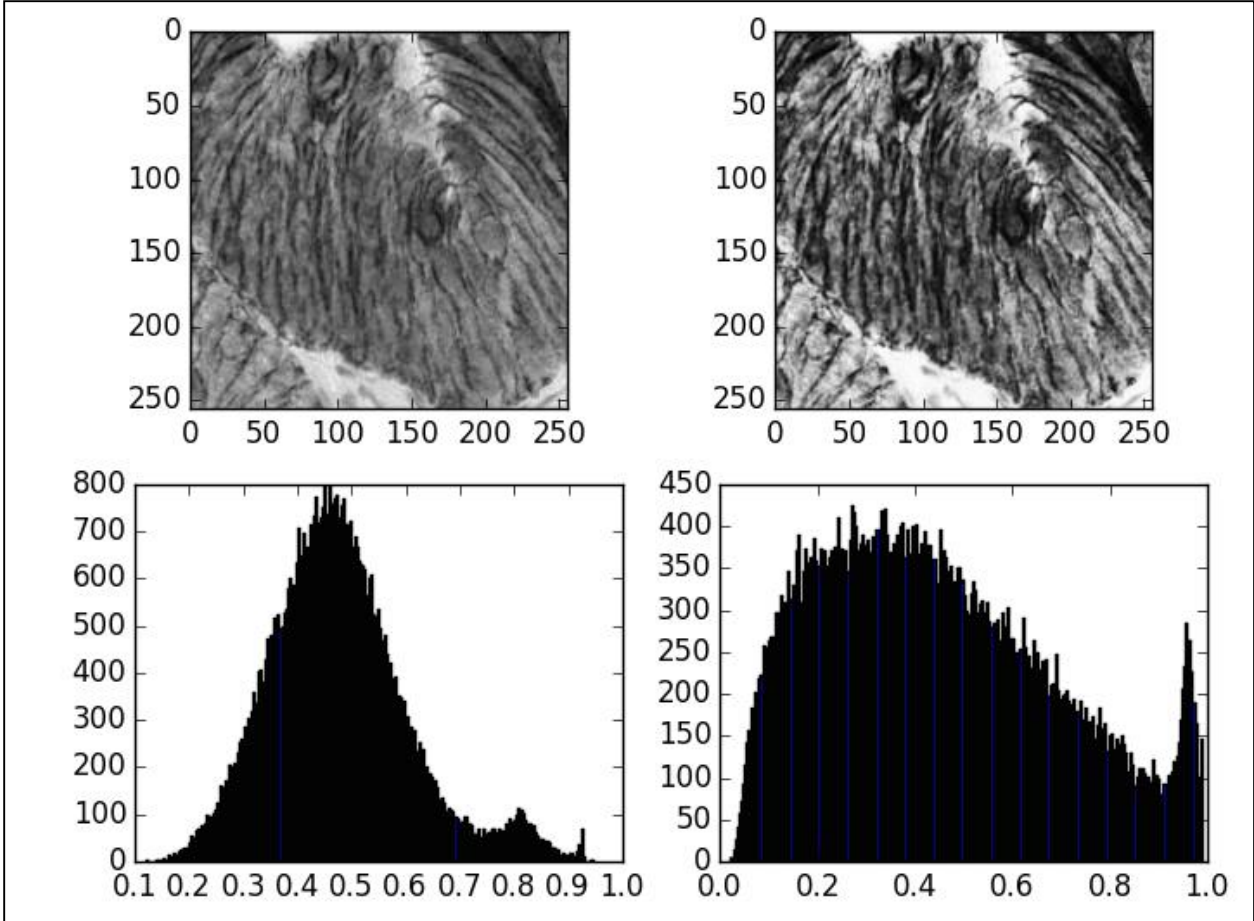


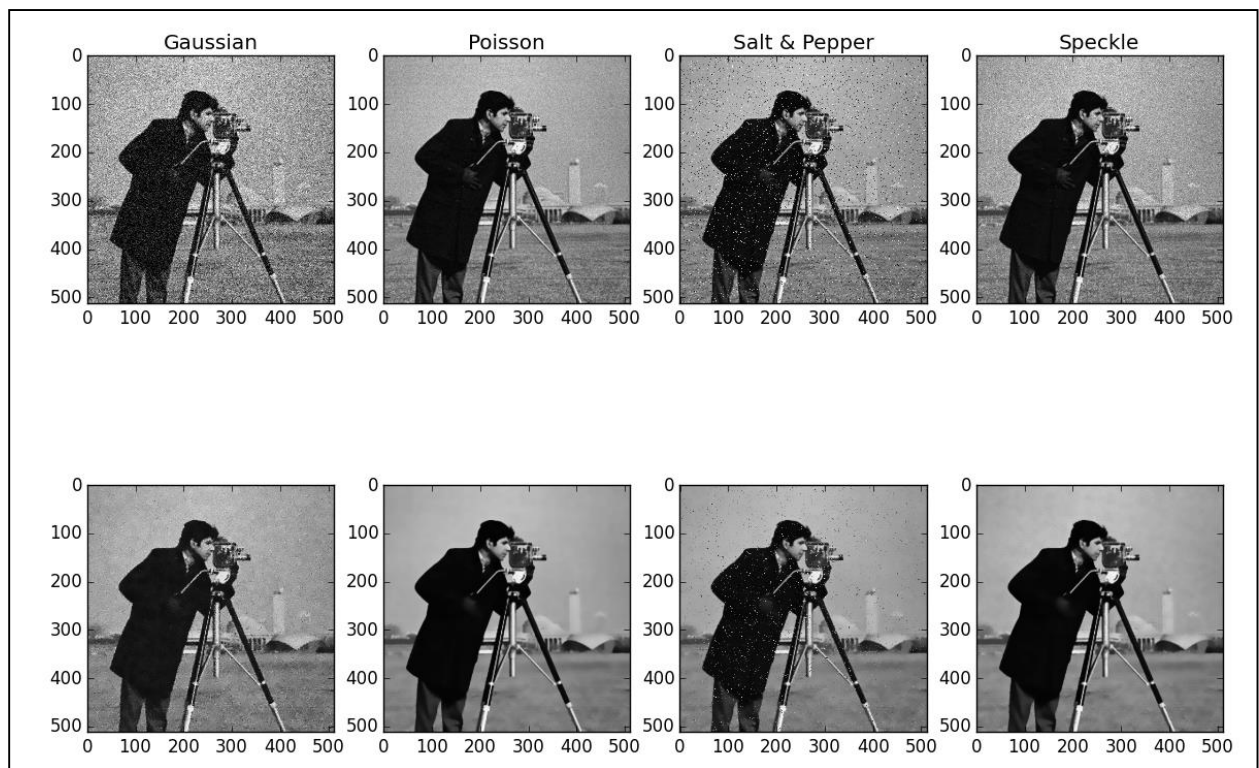
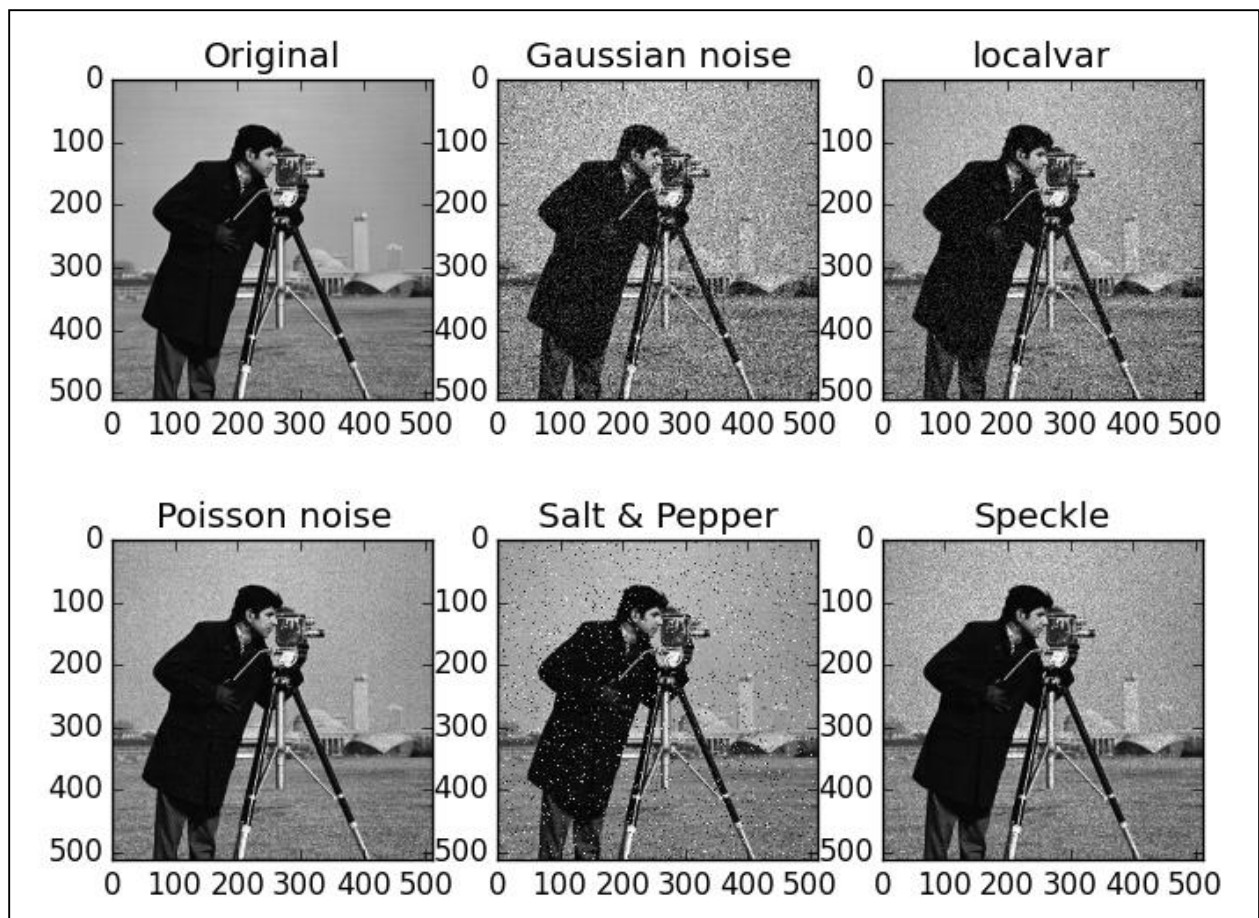


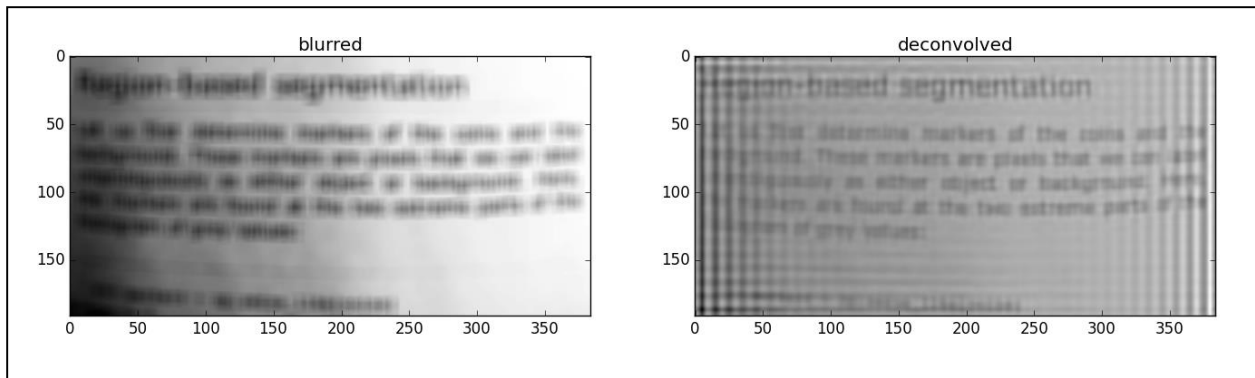
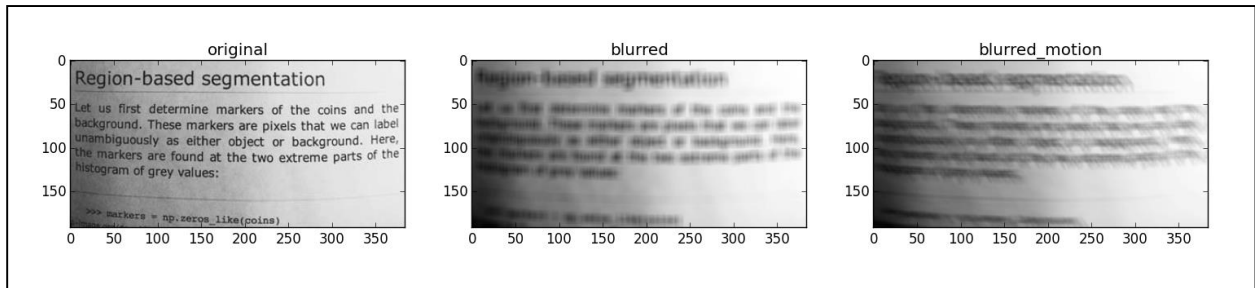


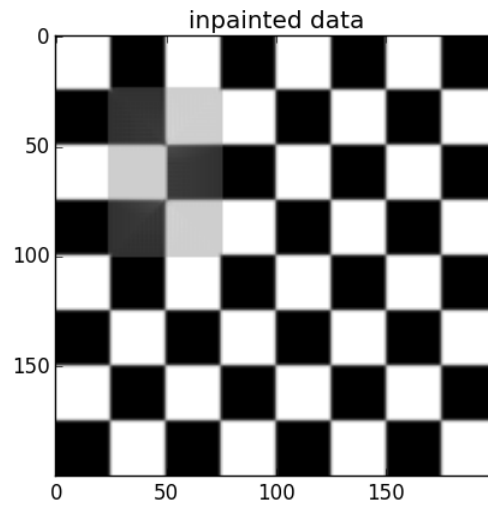
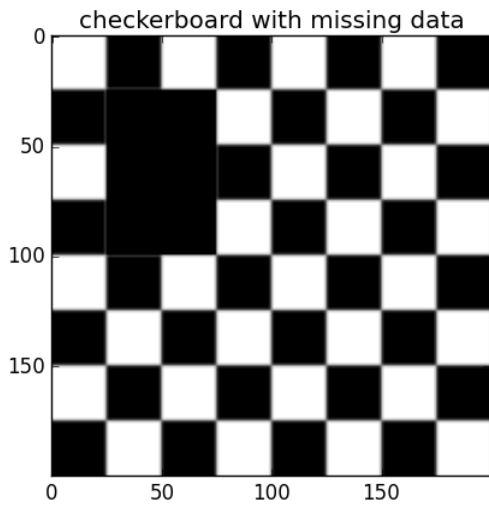
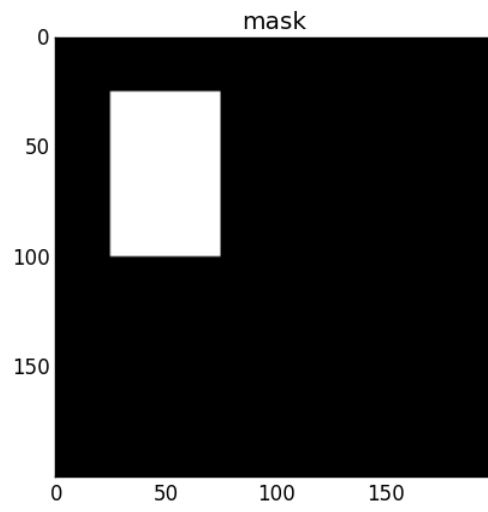
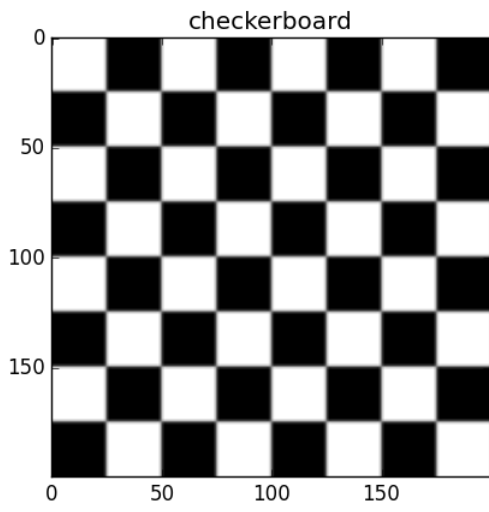


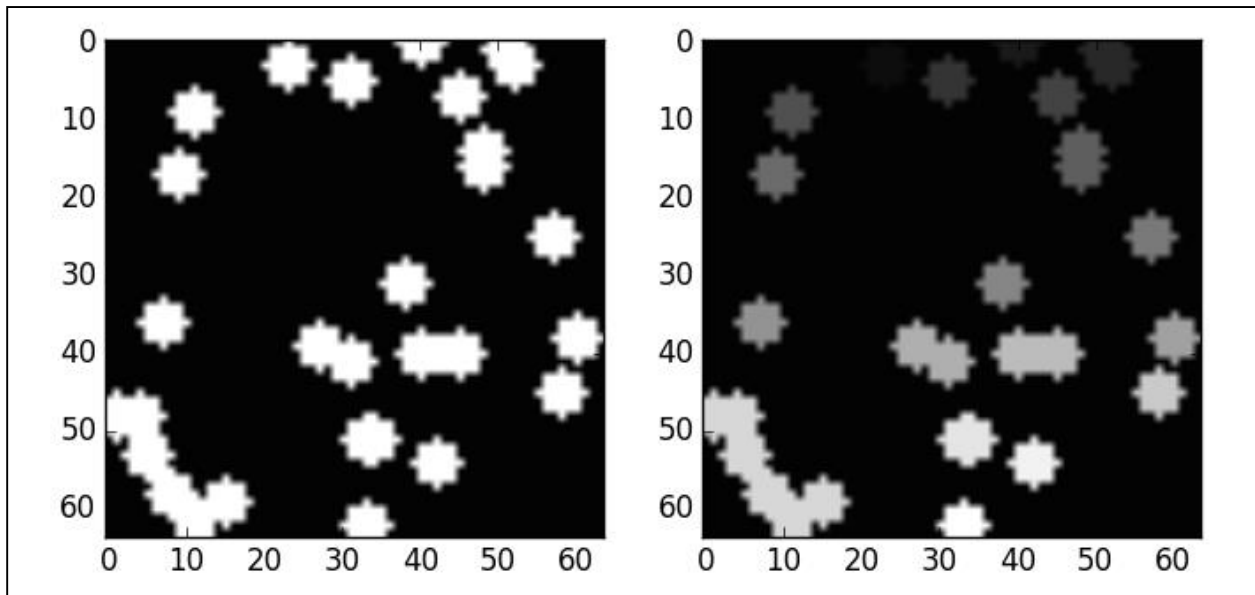
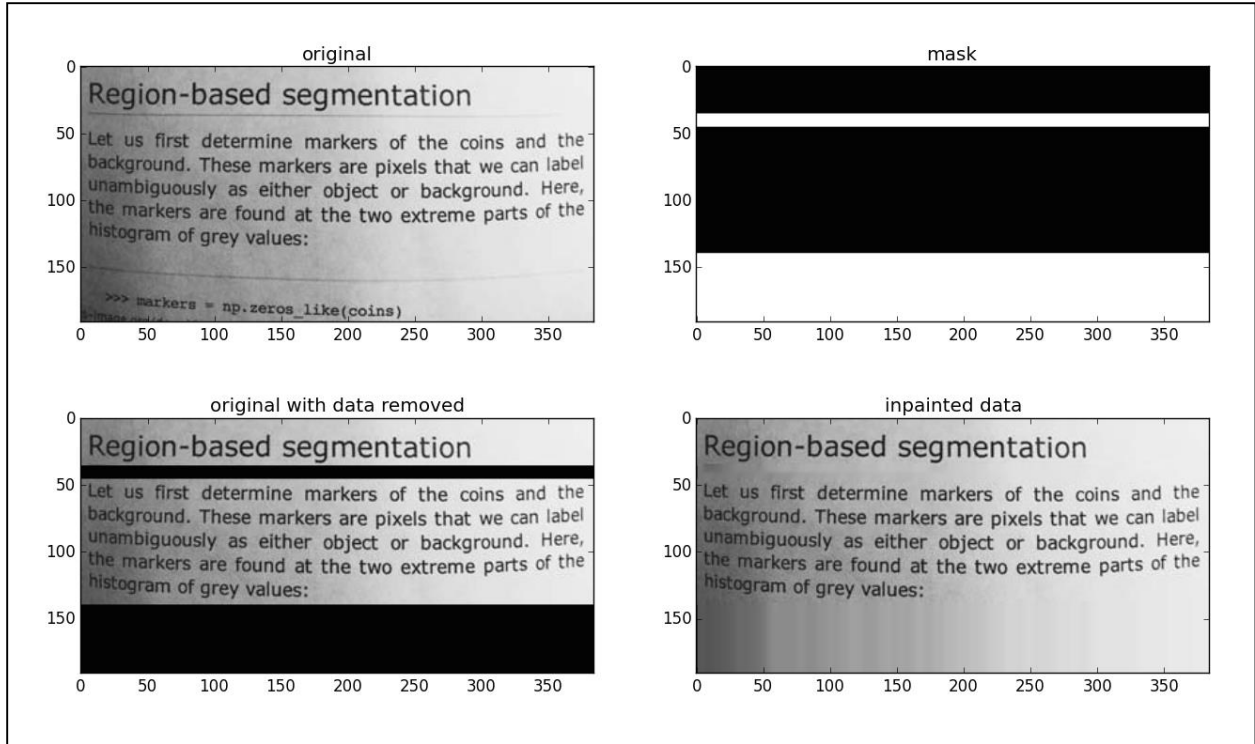


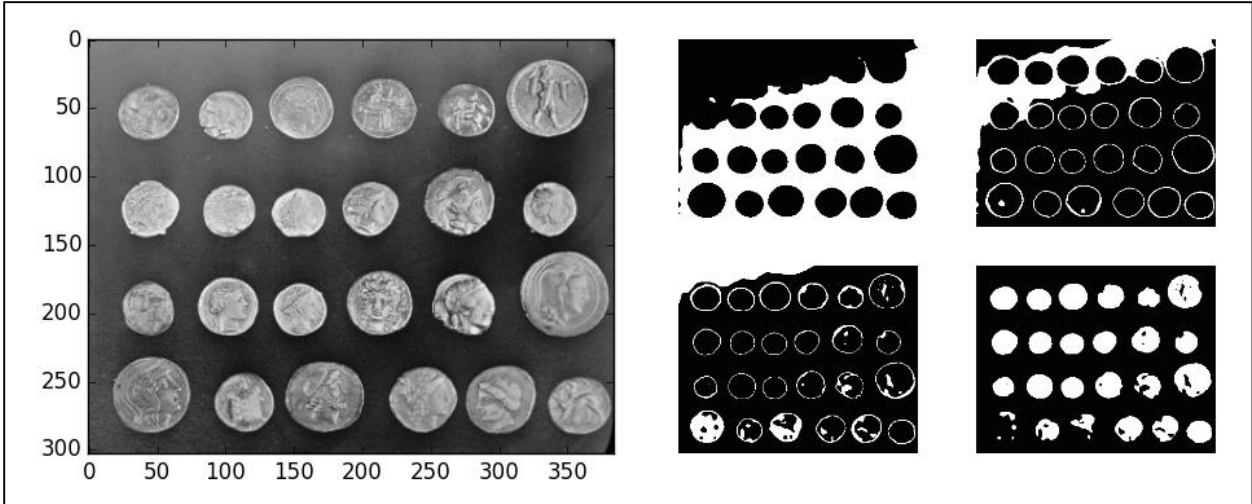
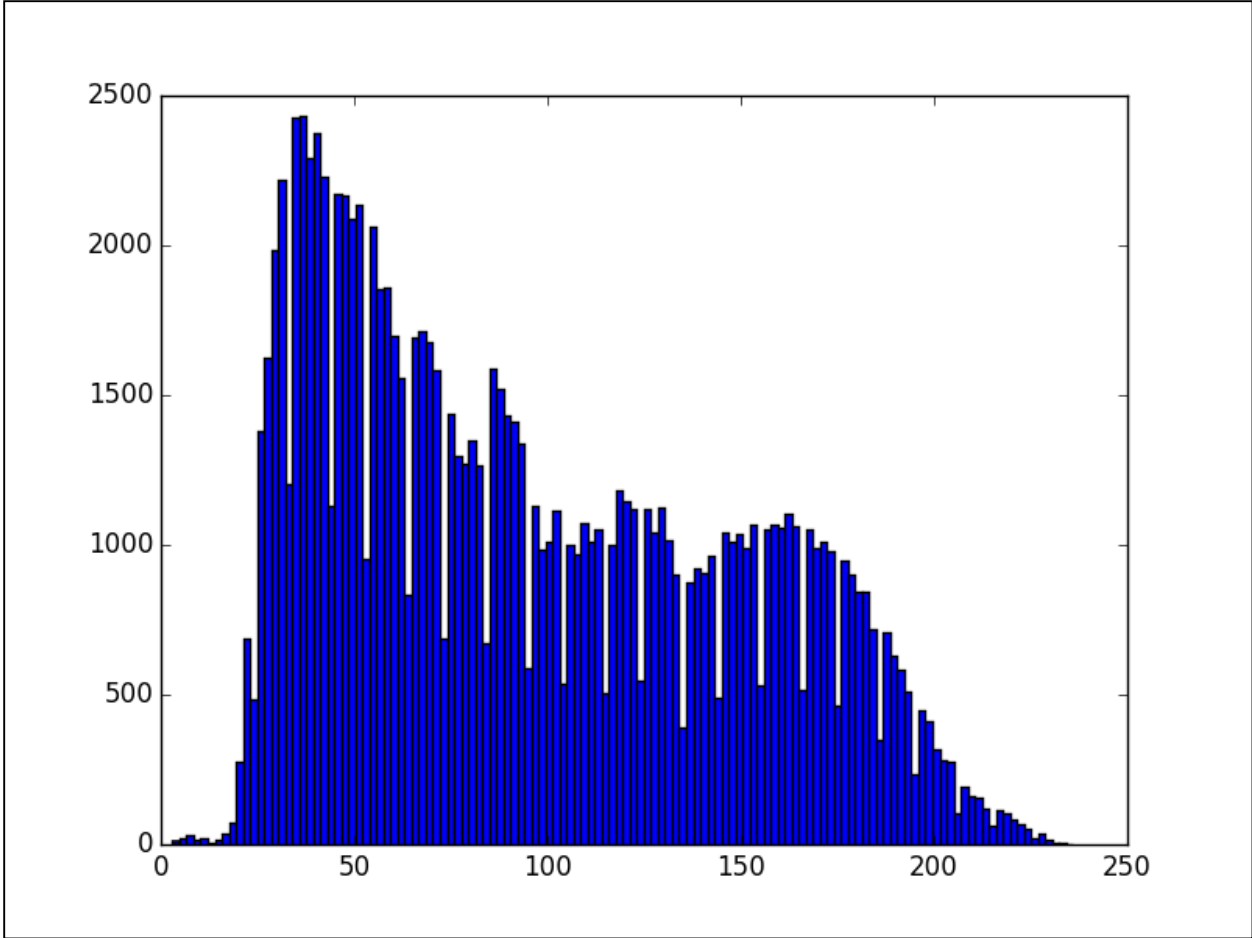


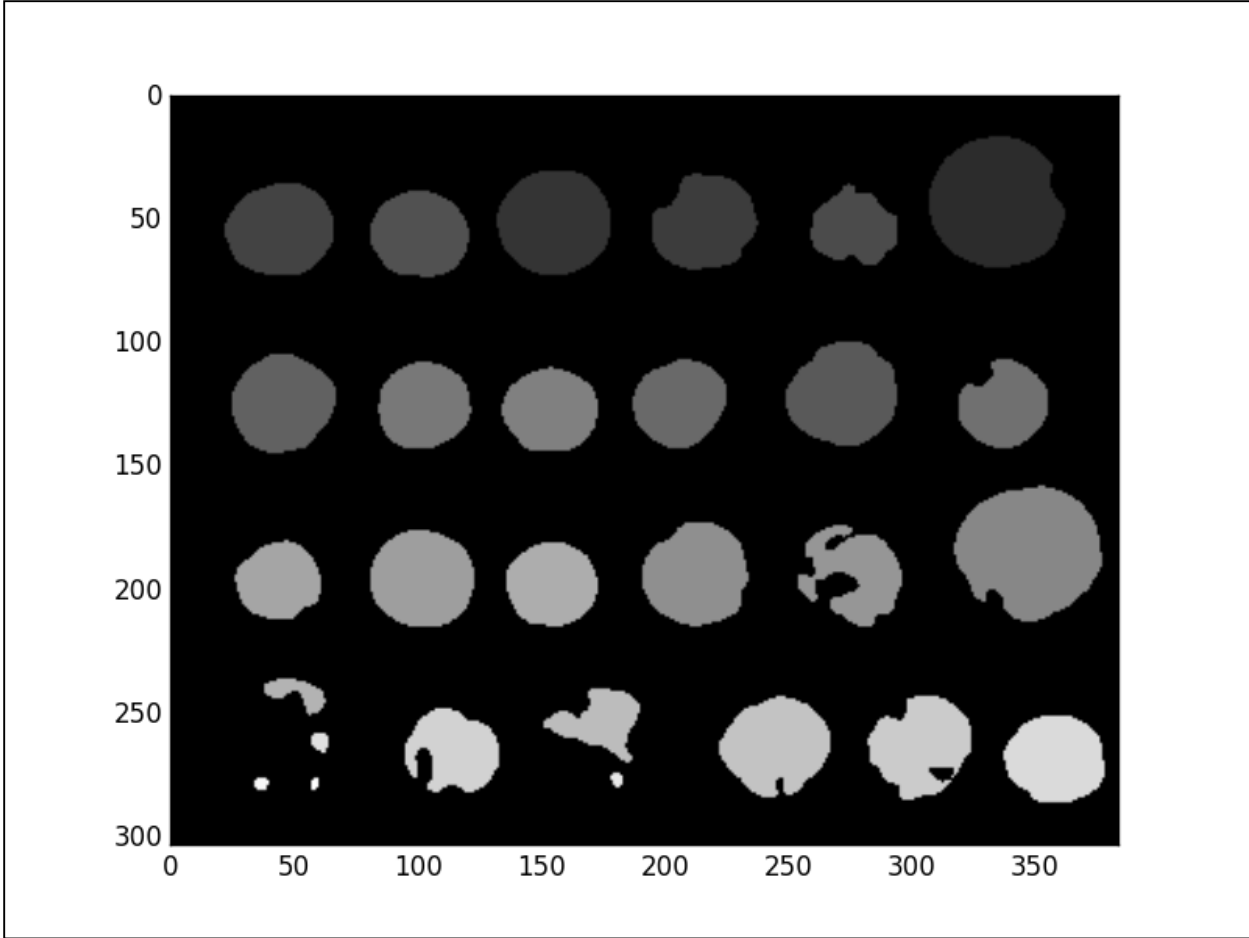


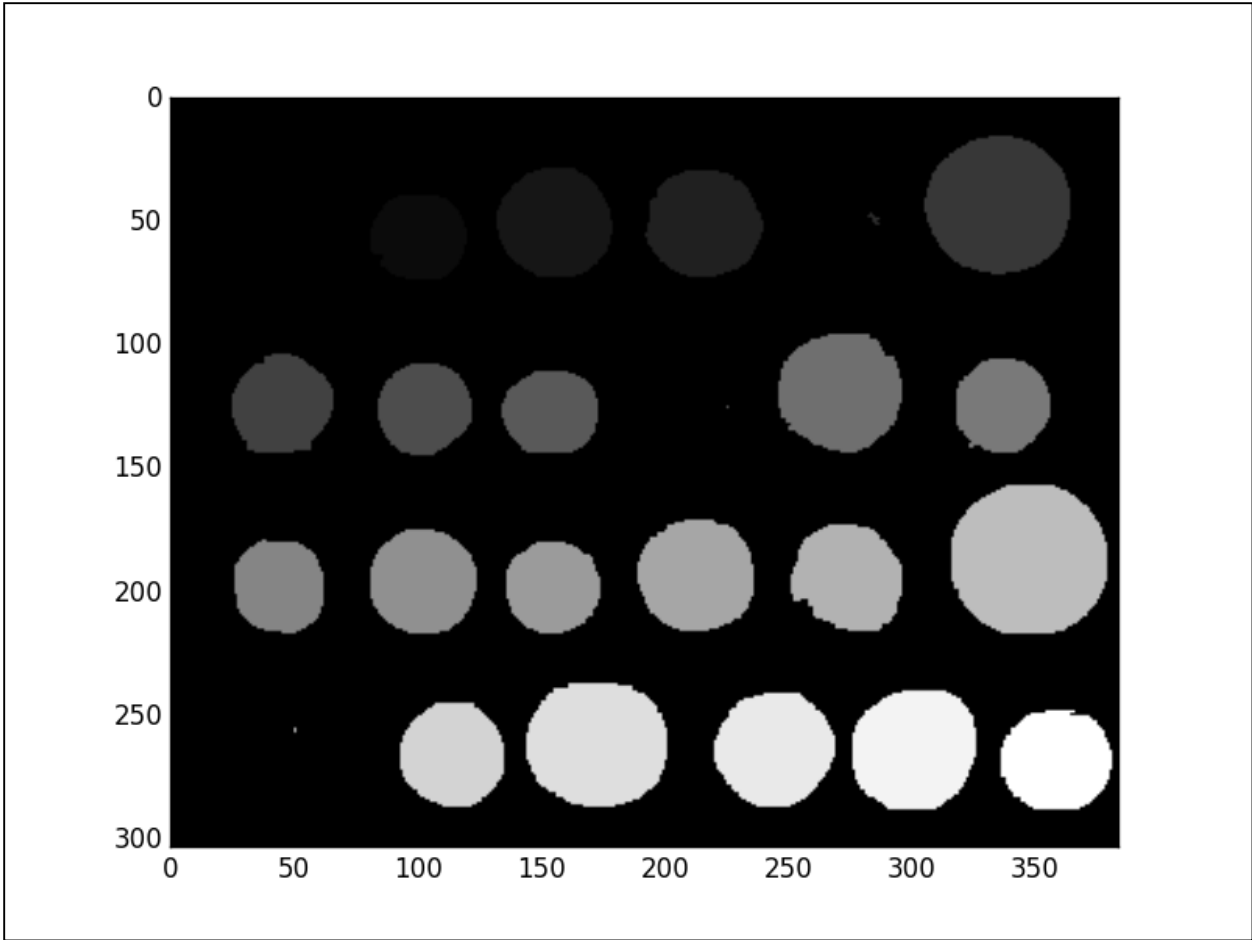


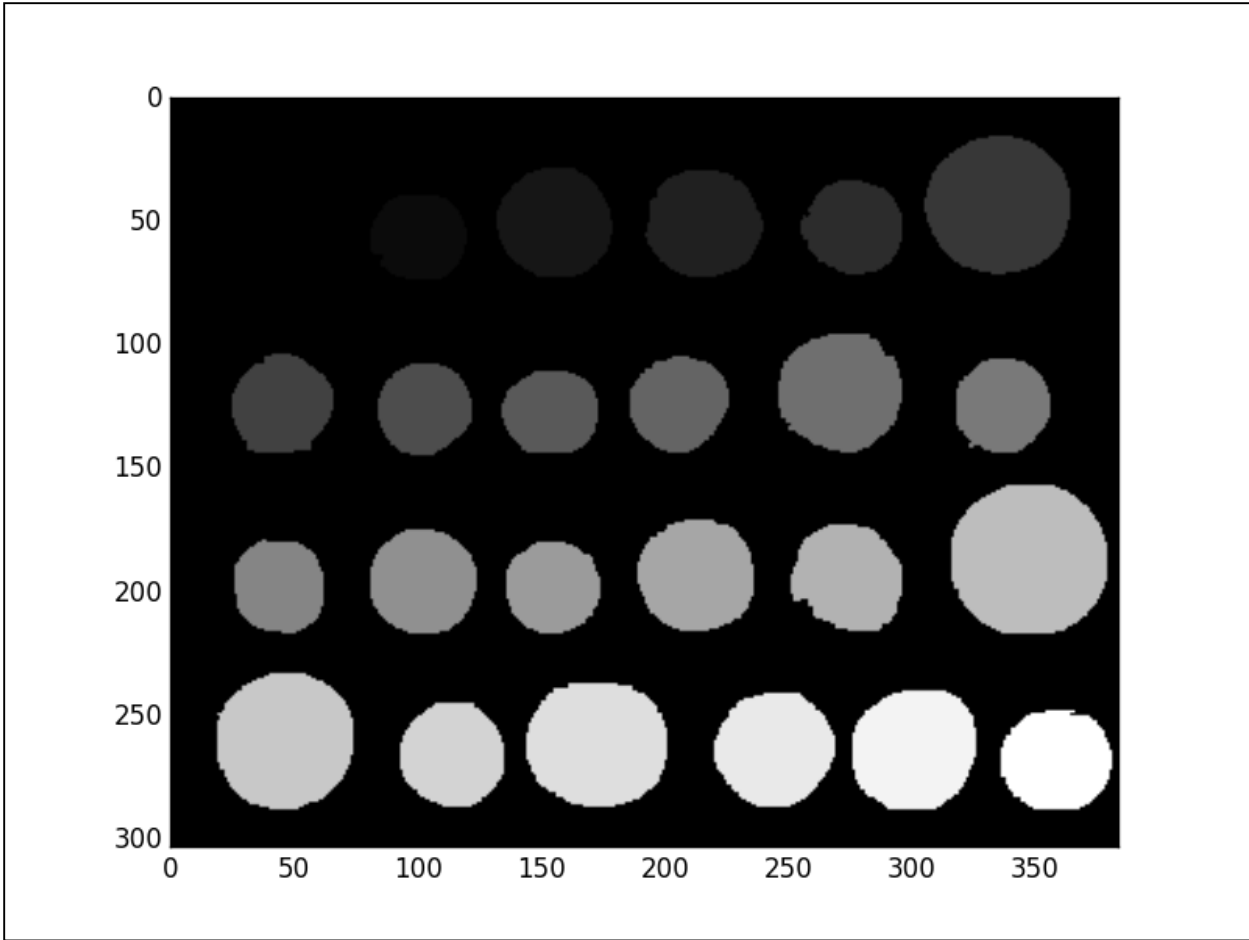


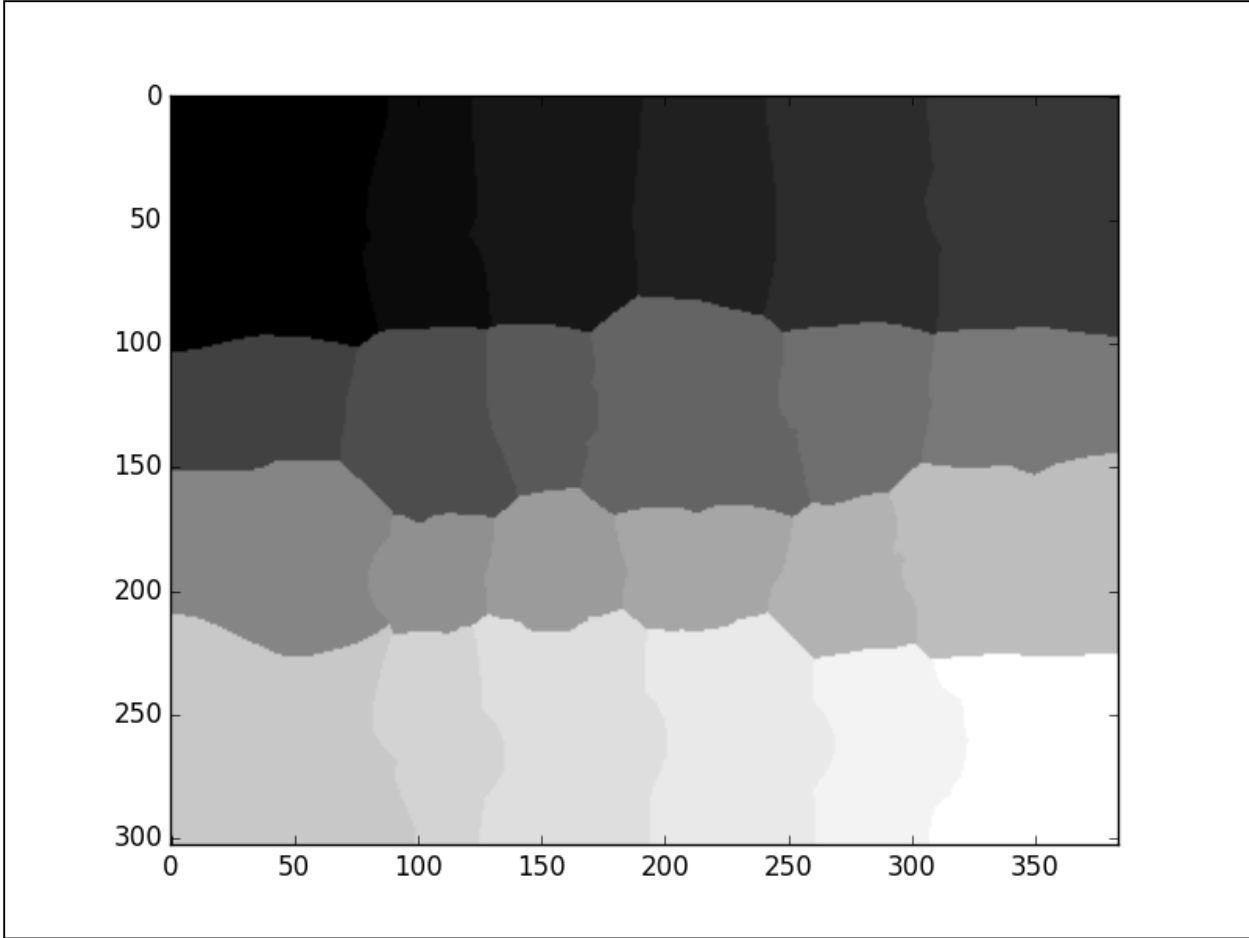


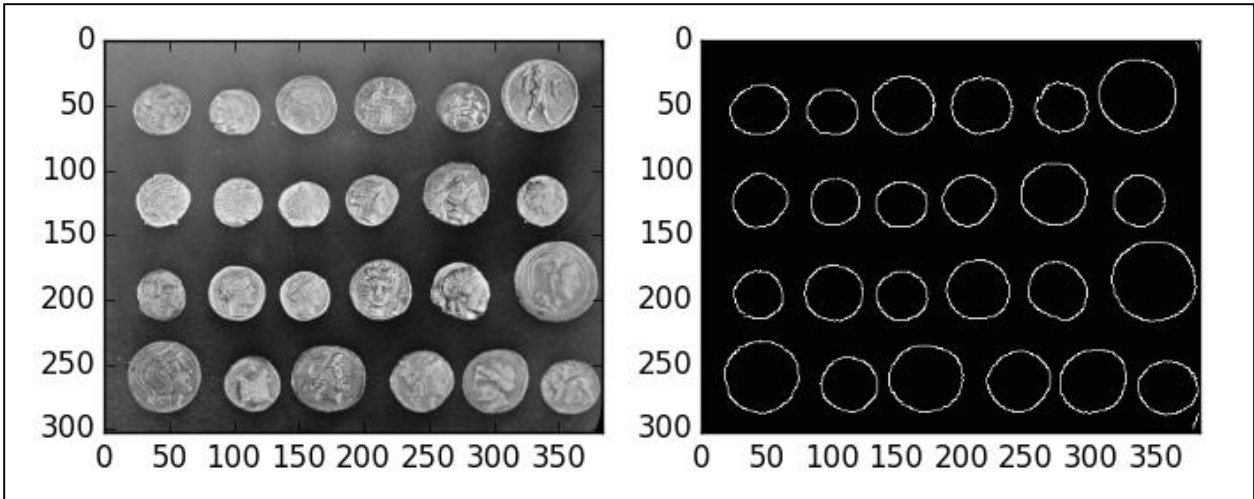
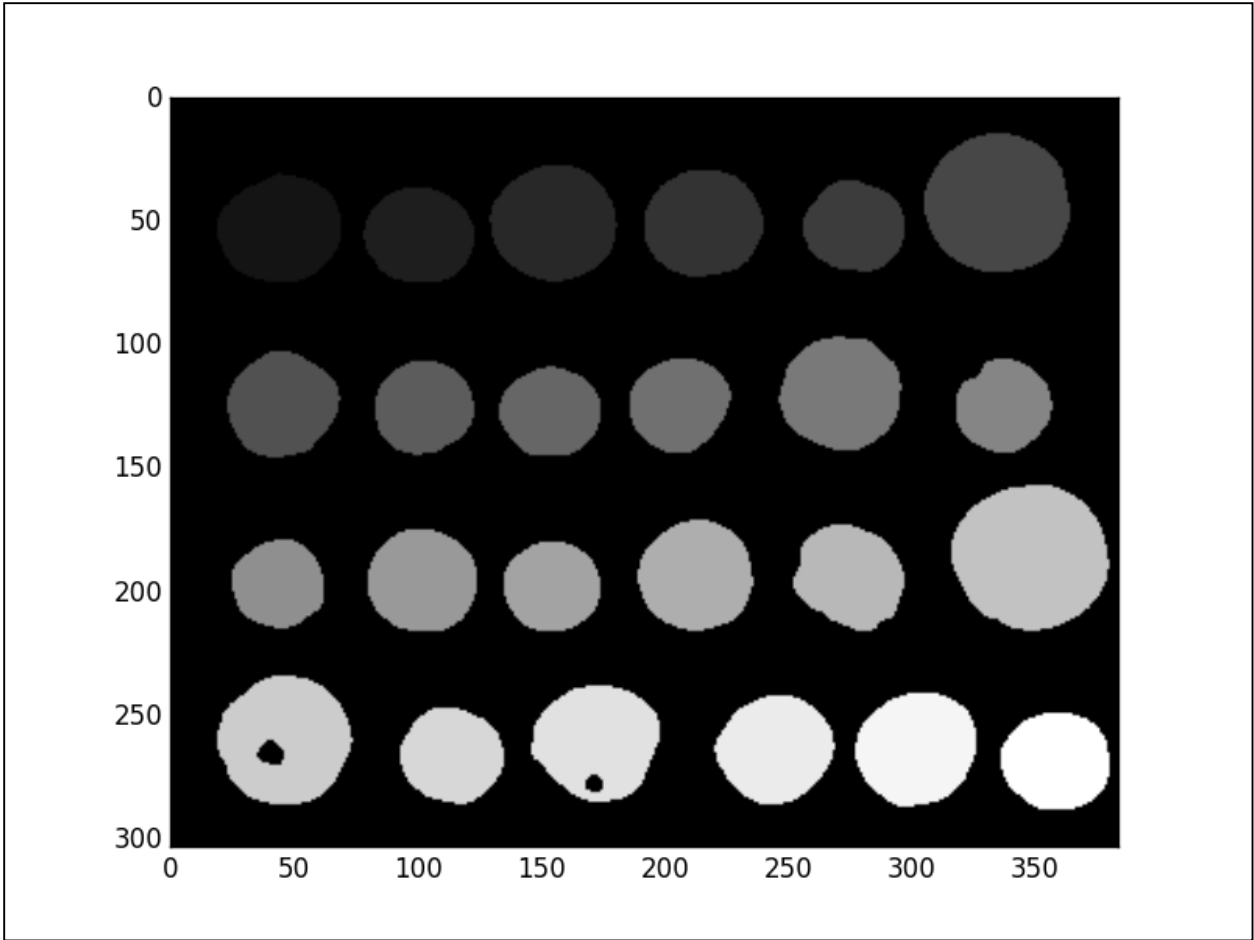


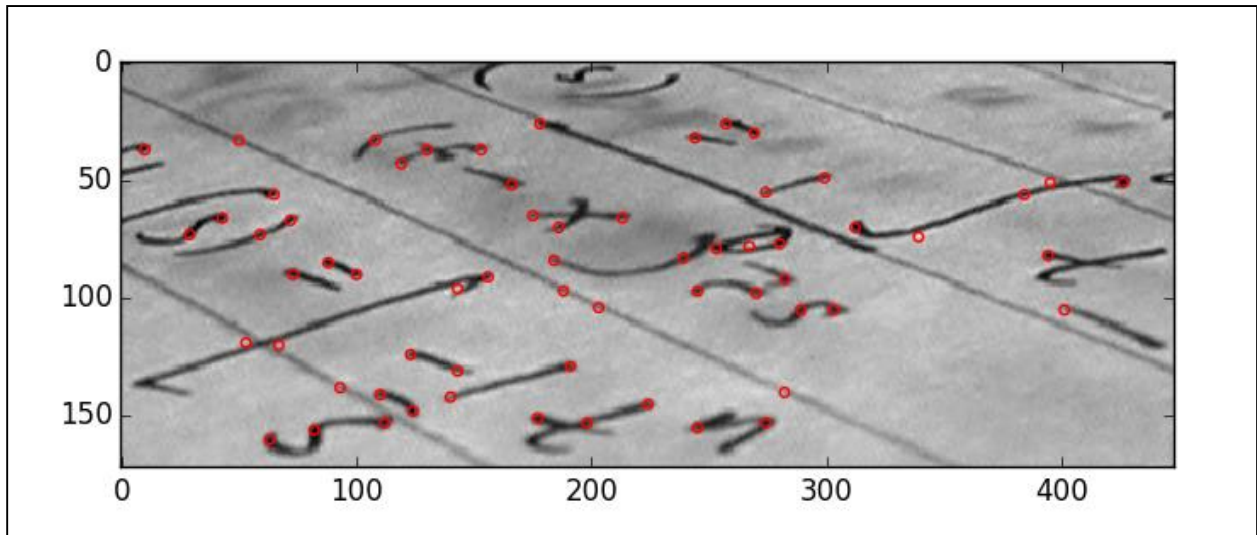
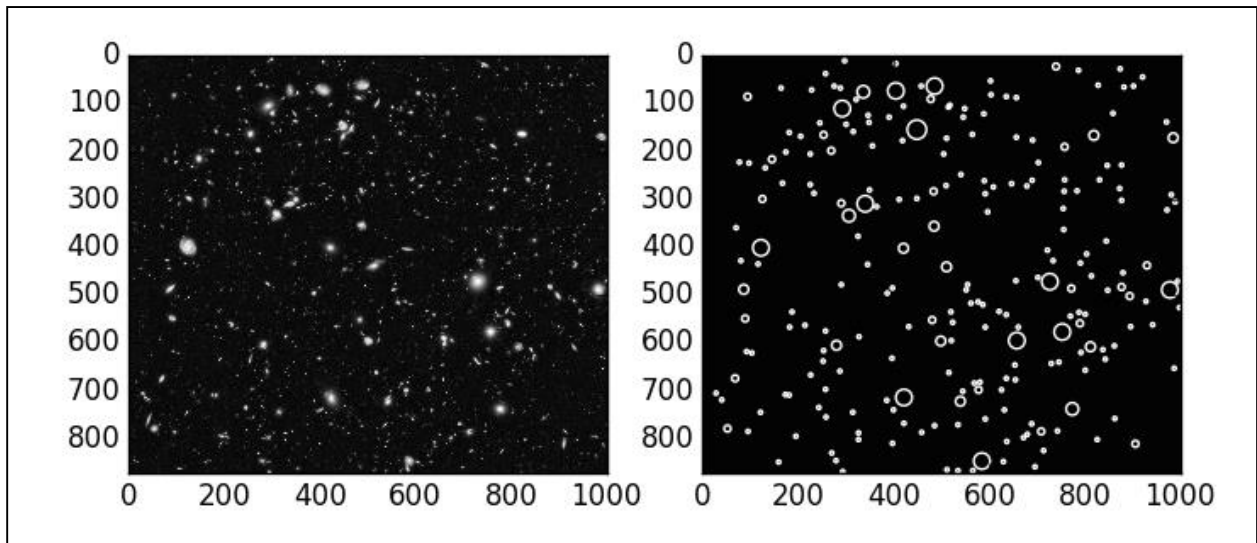
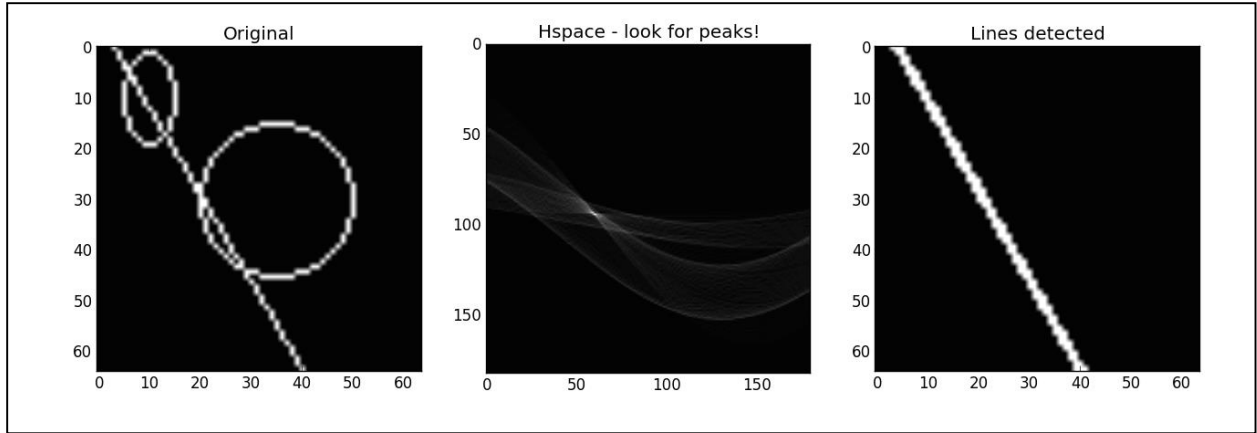












0
1 In a village of La Mancha, the name of which I have no desire to call to mind,
2 there lived not long since one of those gentlemen that keep a lance in the
3 lance-rack, and old buckler, a lean hack, and a greyhound for coursing. An olla
100 4 of rather more beef than mutton, a salad on most nights, scraps on Saturdays,
5 lentils on Fridays, and a pigeon or so extra on Sundays, made away with
6 three-quarters of his income. The rest of it went in a doublet of fine cloth
7 and velvet breeches and shoes to match for holidays, while on week-days he made
8 a brave figure in his best homespun. He had in his house a housekeeper past
9 forty, a niece under twenty, and a lad for the field and market-place, who used
10 to saddle the hack as well as handle the bill-hook. The age of this gentleman
11 of ours was bordering on fifty; he was of a hardy habit, spare, gaunt-featured,
12 a very early riser and a great sportsman. They will have it his surname was
13 Quixada or Quesada (for here there is some difference of opinion among the
14 authors who write on the subject), although from reasonable conjectures it
15 seems plain that he has called Quexana. This, however, is of but little
16 importance to our tale; it will be enough not to stray a hair's breadth from
17 the truth in the telling of it.
18

0 200 400 600 800 1000 1200

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