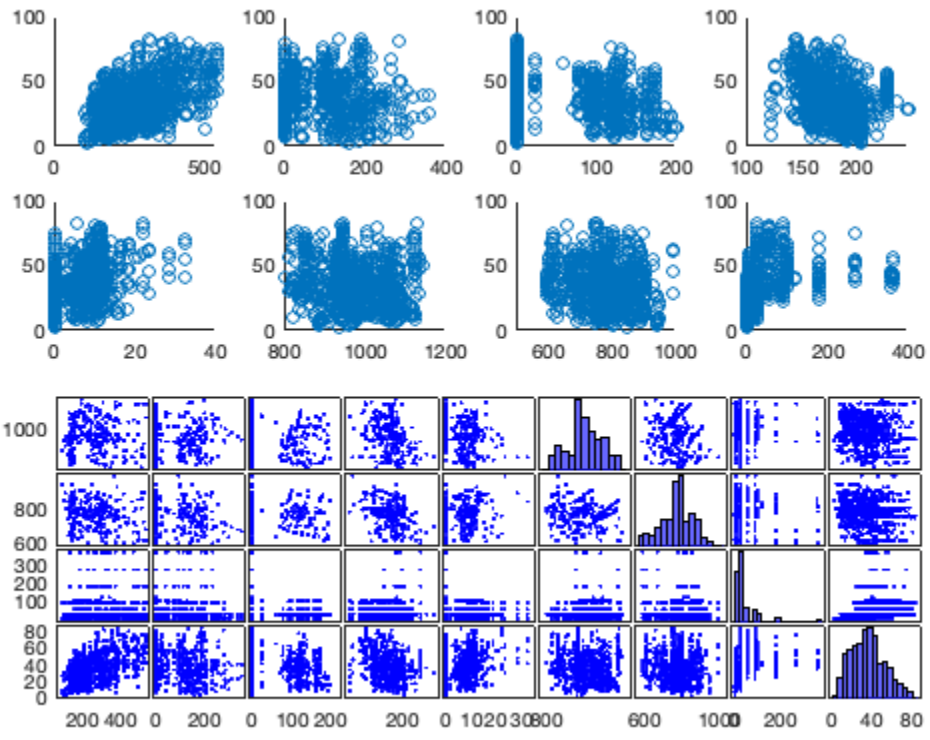
Data Analysis

Load Data

```
traindata = importdata('traindata.txt');
X = traindata(:, 1:8);
Y = traindata(:, 9);
```

Features Correlation plot

```
for k = 1:8
    data = rand(1,10);
    subplot(4, 4, k)
    scatter(X(:, k), Y);
end
```

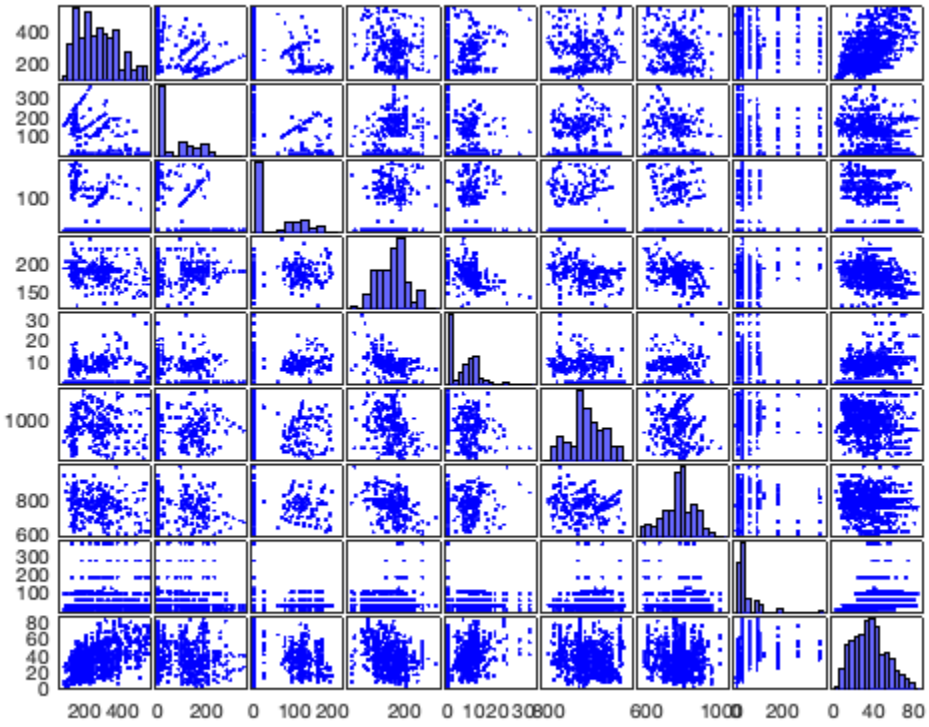


Features Correlation values

```
corre = corrcoef(traindata);
disp(corre(9, :));
```

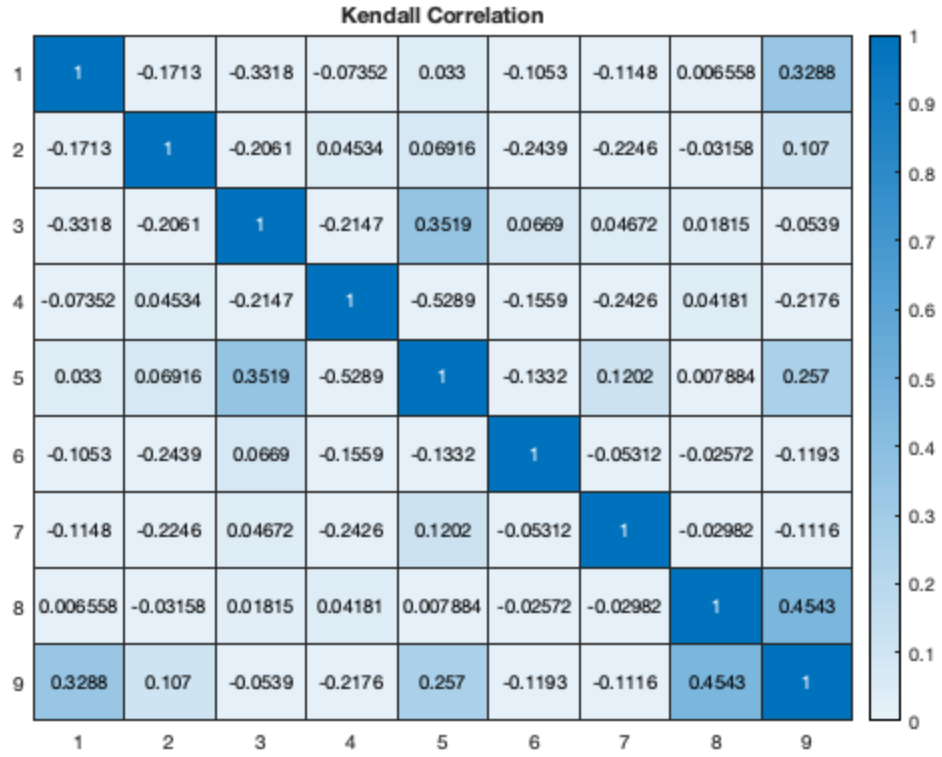
```
    0.4980    0.1148   -0.0983   -0.3015    0.3776   -0.1598   -0.1516    0.3364    1.0000
```

```
gplotmatrix(traindata);
```



Features Correlation values plot

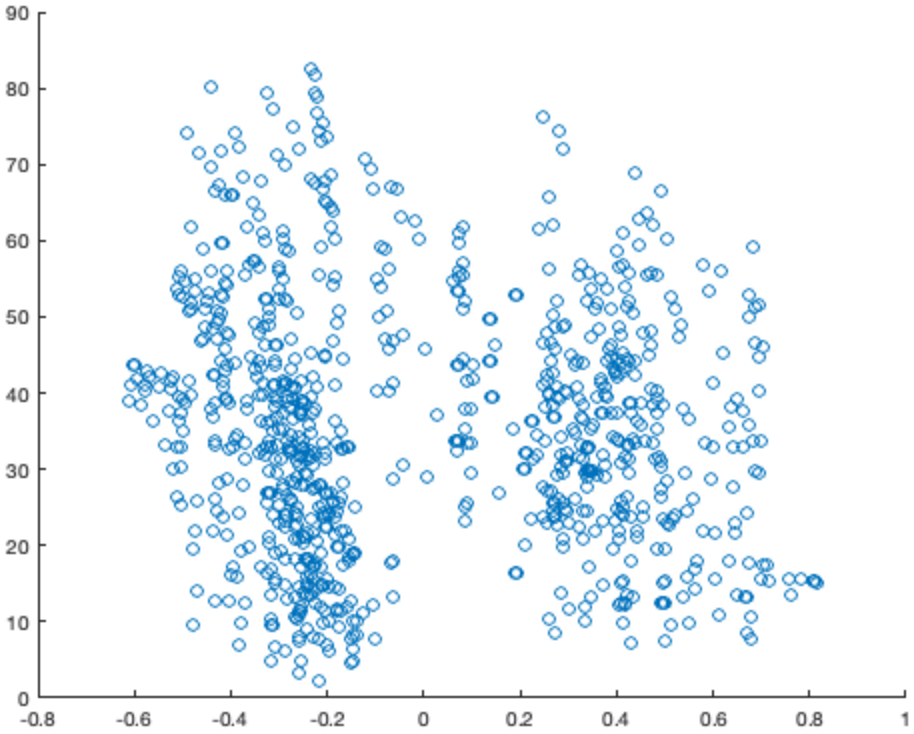
```
type = "Kendall";
C = corr(traindata,'type',type);
heatmap(C, 'ColorLimits',[0 1],'Title', type + " Correlation");
```



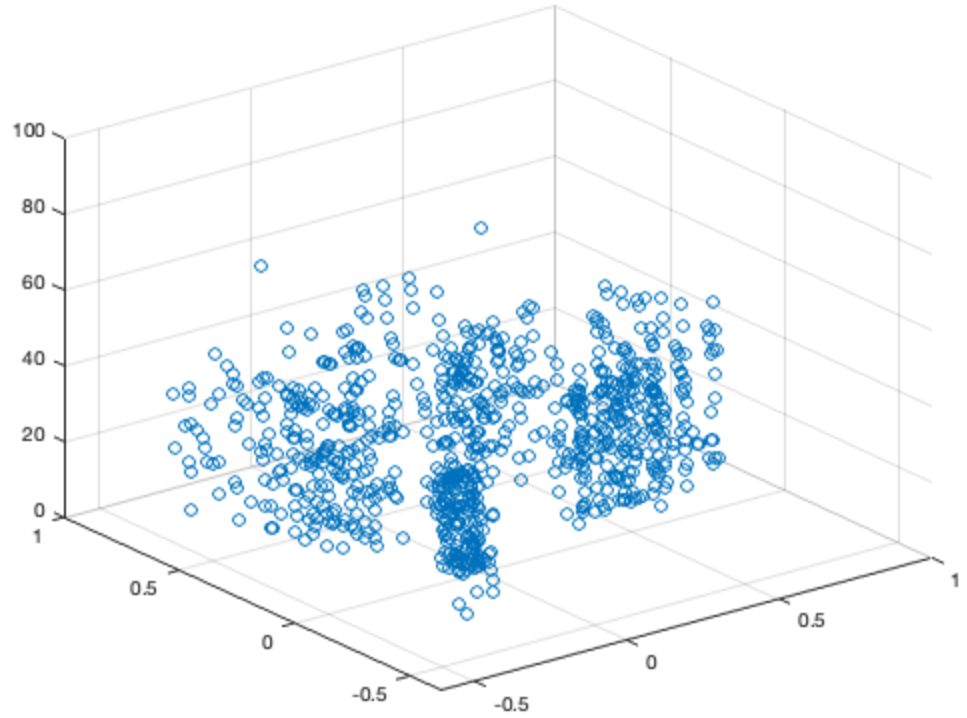
PCA for visualization

```
mu = mean(X);
r = range(X);
X = (X - mu) ./ r;
[P, S, V] = pca(X);

scatter(S(:, 1), Y);
```




```
scatter3(S(:,1), S(:,2), Y);
```


100
80
60
40
20
0
1
0.5
0
-0.5
-0.5
0
0.5
1