```
tbl=readtable('clean_yellow_sample_2016_06.csv');
summary(tbl)
```

```
Variables:

    pickup_longitude: 1029593×1 double
        Values:

            最小値    -115.17
            中位数    -73.981
            最大値    -56.643

    pickup_latitude: 1029593×1 double
        Values:

            最小値    33.611
            中位数    40.755
            最大値    51.098

    dropoff_longitude: 1029593×1 double
        Values:

            最小値    -115.18
            中位数    -73.979
            最大値     106.25

    dropoff_latitude: 1029593×1 double
        Values:

            最小値    33.895
            中位数    40.755
            最大値    50.312

    trip_distance: 1029593×1 double
        Values:

            最小値    0.01
            中位数    1.72
            最大値     500

    passenger_count: 1029593×1 double
        Values:

            最小値    0
            中位数    1
            最大値    8
```

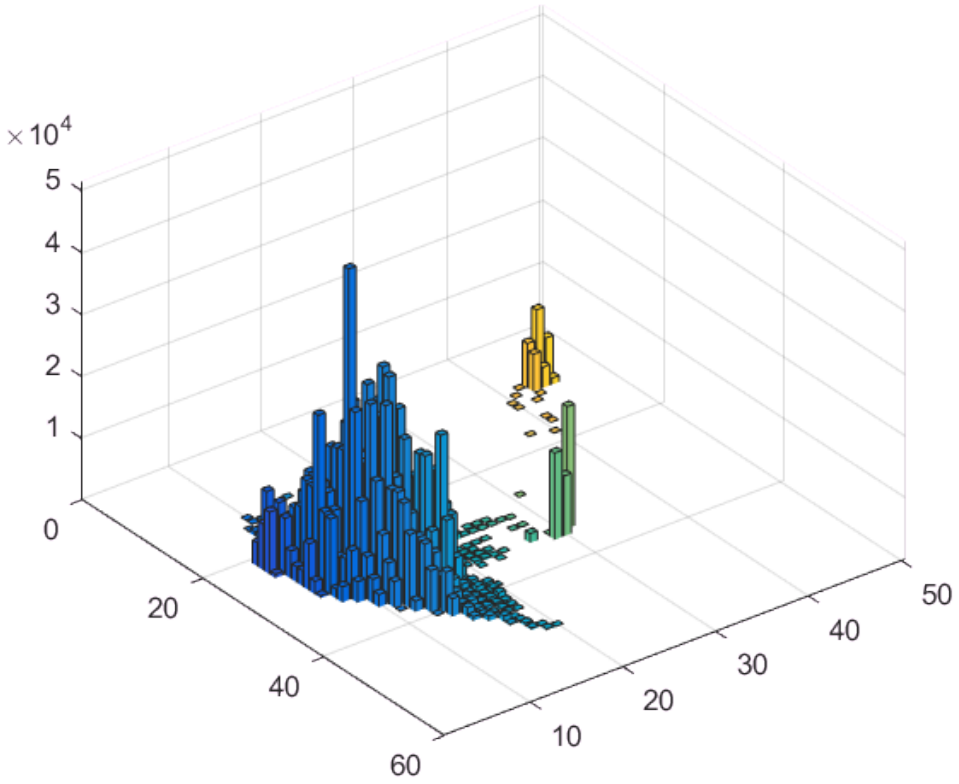
Please note! I select the following range and divide them into 100*100 (as well as 50*50) girds!

latitude range [40.6,40.85]

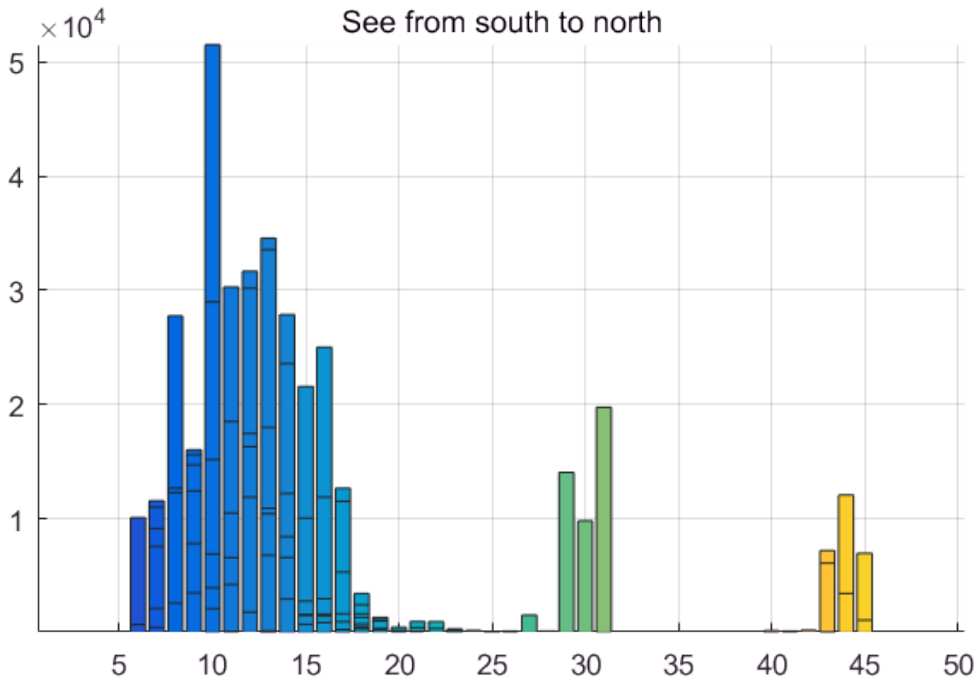
longitude range [-74.05,-73.75]

```
yedges=linspace(40.6,40.85,50);%latitude
xedges=linspace(-74.05,-73.75,50);%longitude
[tab,I,J]=hist3d(tbl.pickup_longitude,tbl.pickup_latitude,tbl.passenger_count,xedges,yedges);
```

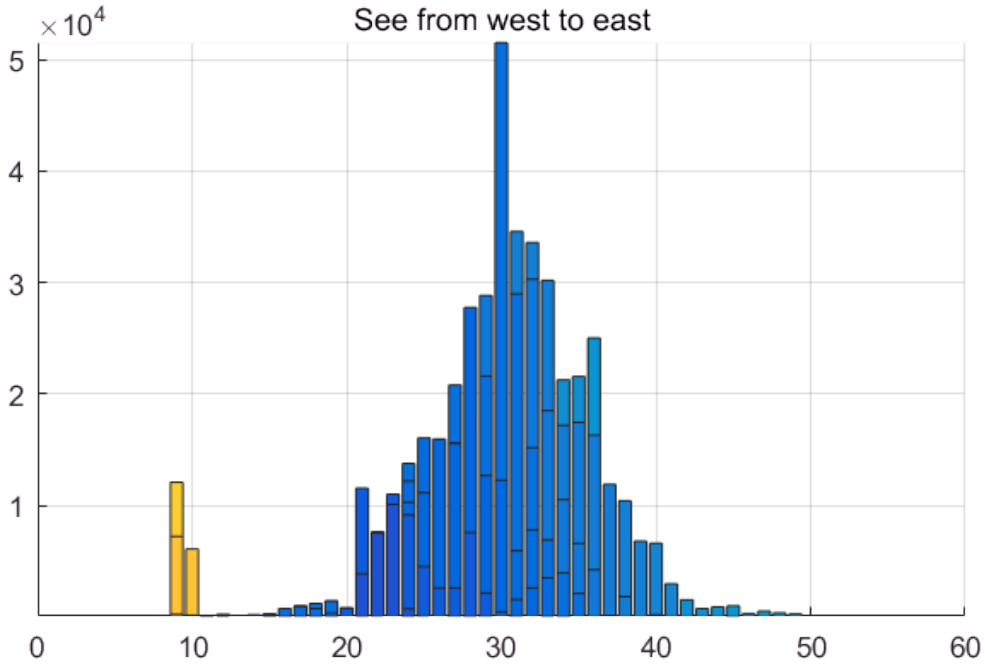
```
C=tab;C(C<10)=NaN; %colormap
figure
colormap default
bar3(tab)
zlim([100 max(max(tab))])
```



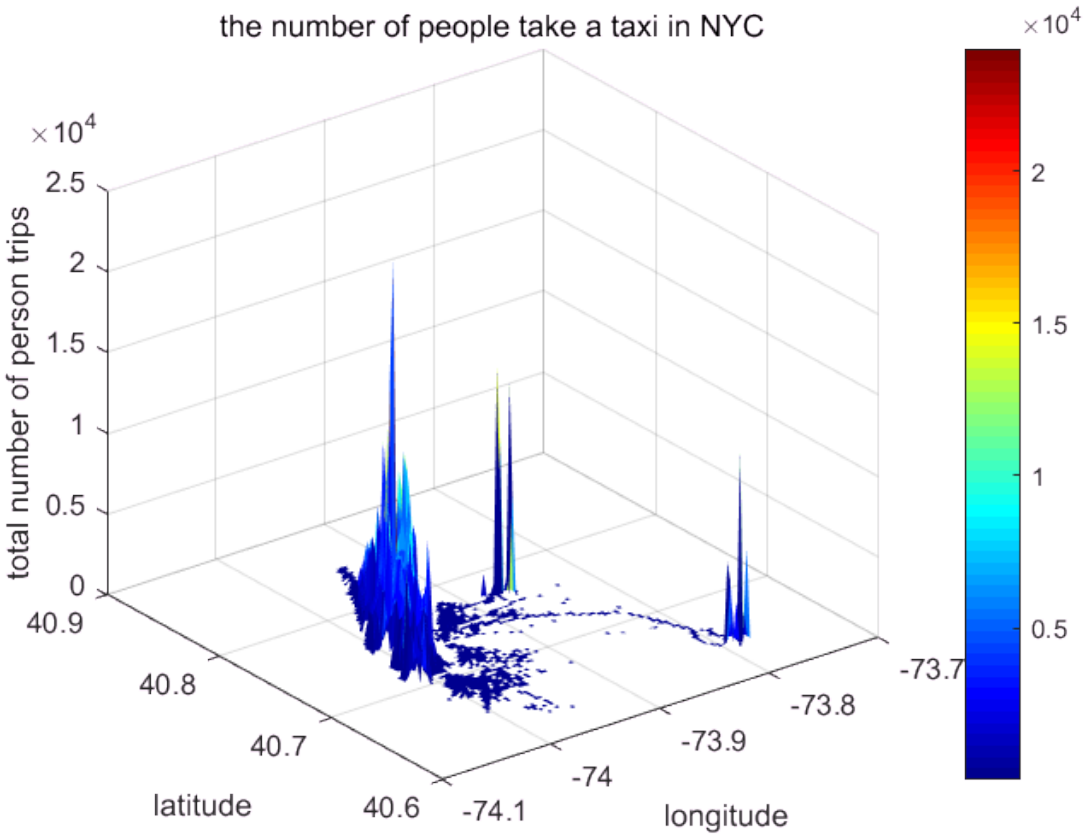

```
bar3(tab)
view([0 -1 0])
zlim([100 max(max(tab))])
title('See from south to north')
```



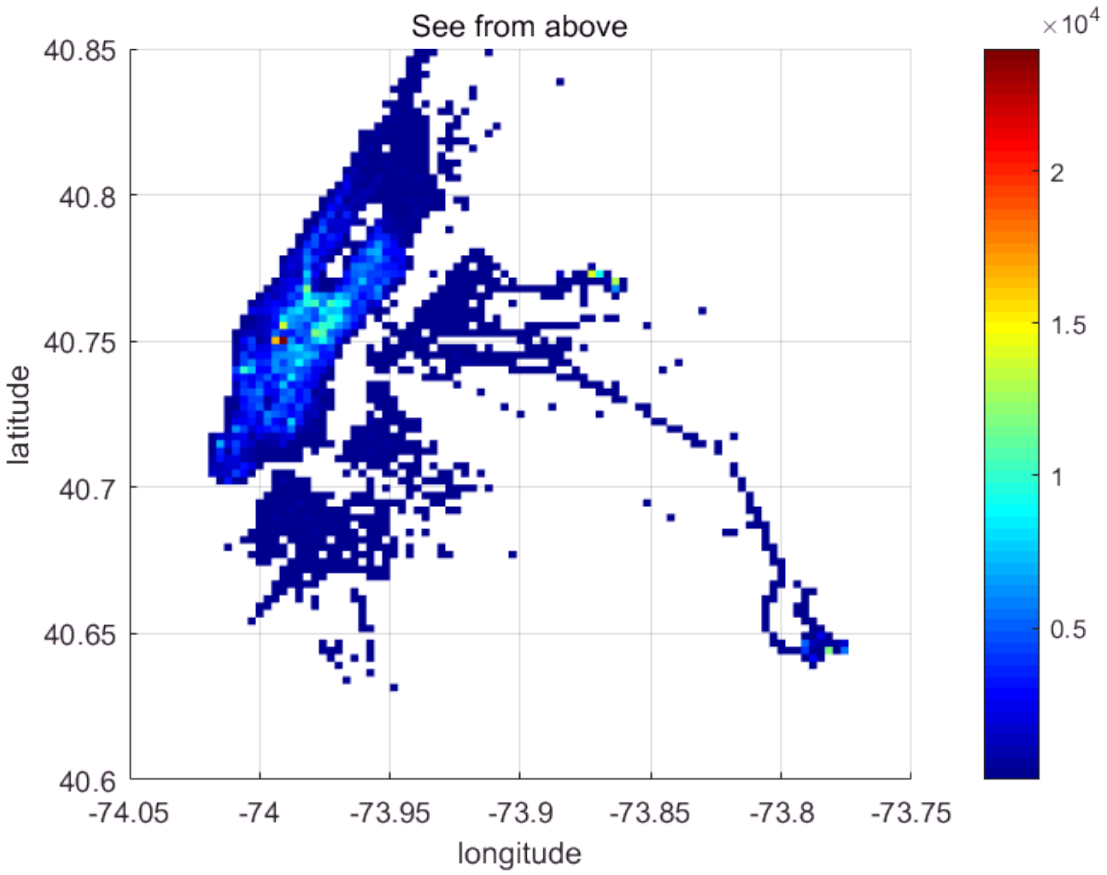

```
bar3(tab)
view([-1 0 0])
zlim([100 max(max(tab))])
title('See from west to east')
```



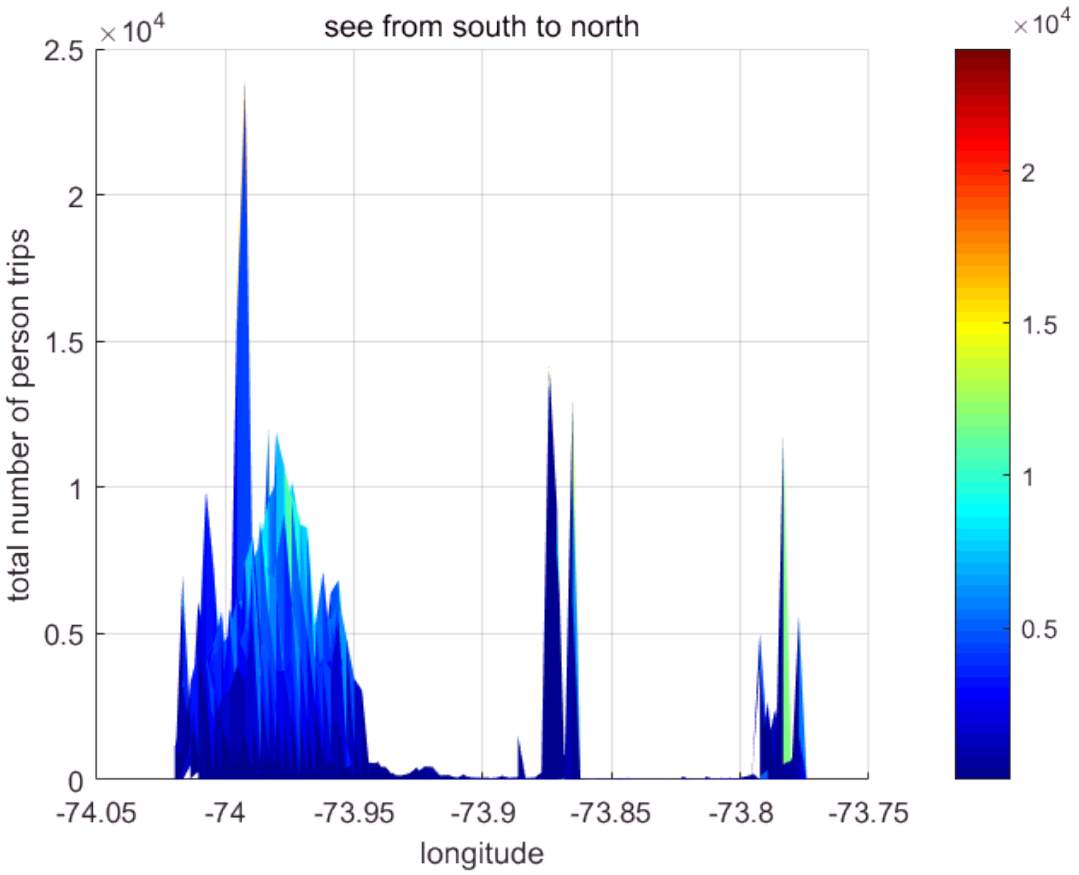

```
yedges=linspace(40.6,40.85,100);%latitude
xedges=linspace(-74.05,-73.75,100);%longitude
[tab,I,J]=hist3d(tbl.pickup_longitude,tbl.pickup_latitude,tbl.passenger_count,xedges,yedges);
C=tab;C(C<10)=NaN; %colormap
figure
surf(xedges,yedges,tab,C,'linestyle','none')
colorbar
colormap jet
xlabel('longitude')
ylabel('latitude')
zlabel('total number of person trips')
title('the number of people take a taxi in NYC')
```



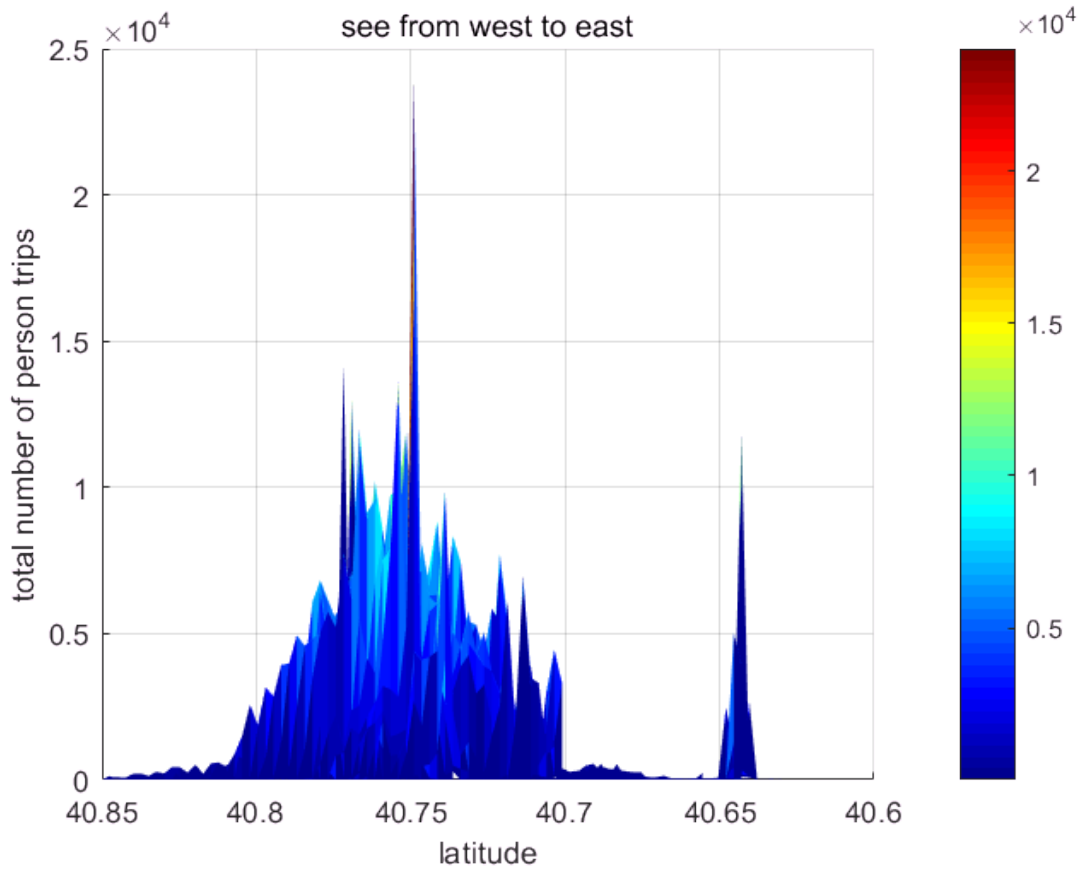

```
surf(xedges,yedges,tab,C,'linestyle','none')
colormap jet
colorbar
xlabel('longitude')
ylabel('latitude')
zlabel('total number of person trips')
title('See from above')
view(2)
```




```
surf(xedges,yedges,tab,C,'linestyle','none')
colorbar
view([0 -1 0])
title('see from south to north')
xlabel('longitude')
ylabel('latitude')
zlabel('total number of person trips')
```

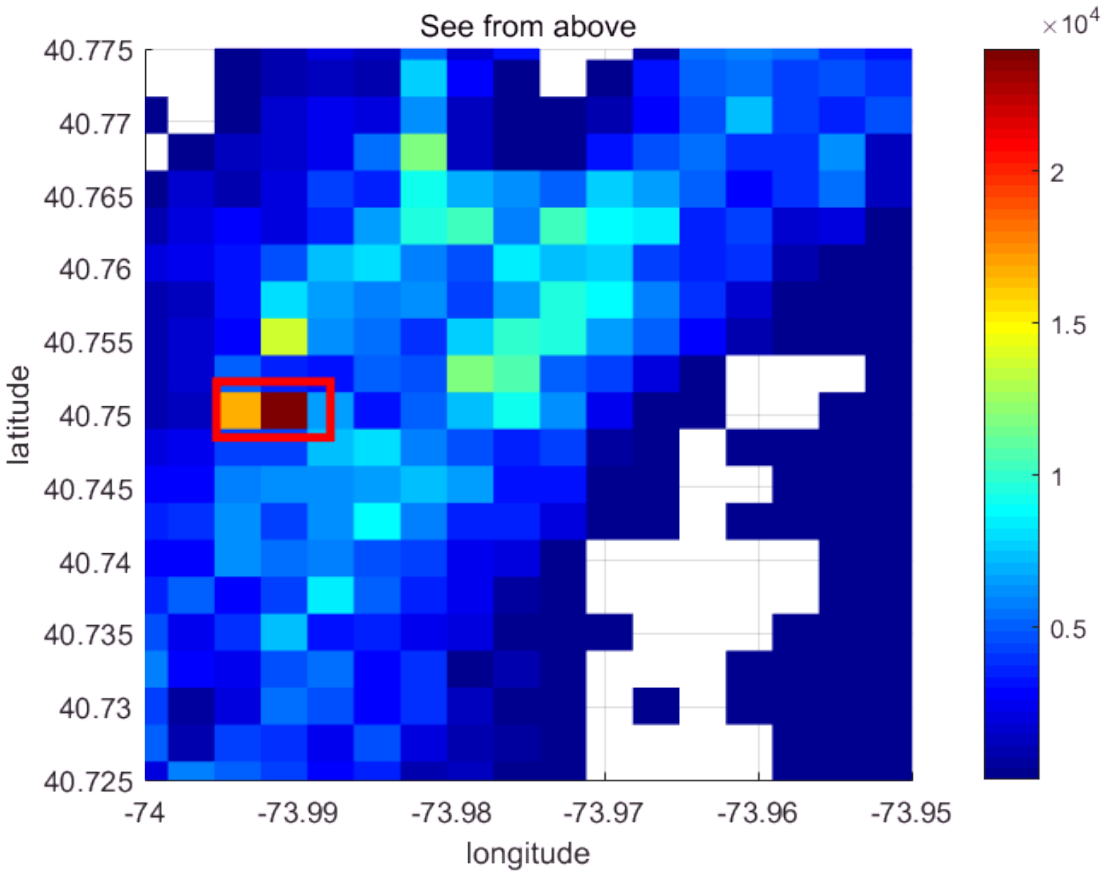



```
surf(xedges,yedges,tab,C,'linestyle','none')
colorbar
view([-1 0 0])
title('see from west to east')
xlabel('longitude')
ylabel('latitude')
zlabel('total number of person trips')
```



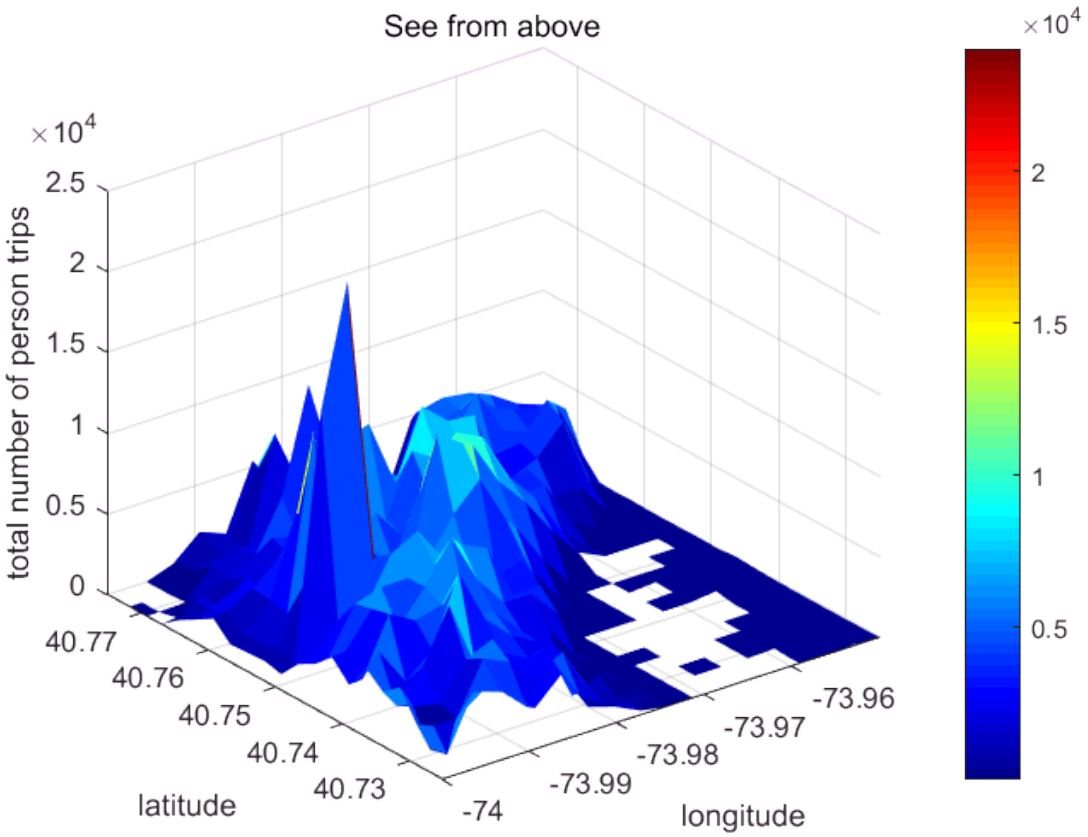
Now we take a look at the place where most (most means above median) of the trips originate. We find the busiest place in NYC!

```
yedges=linspace(40.6,40.85,100);%latitude
xedges=linspace(-74.05,-73.75,100);%longitude
[tab,I,J]=hist3d(tbl.pickup_longitude,tbl.pickup_latitude,tbl.passenger_count,xedges,yedges);
tab(tab<median(tab(:)))=NaN;
C=tab;C(C==0)=NaN; %colormap
surf(xedges,yedges,tab,C,'linestyle','none')
colormap jet
colorbar
xlabel('longitude')
ylabel('latitude')
zlabel('total number of person trips')
title('See from above')
view(2)
xlim([-74,-73.95])
ylim([40.725,40.775])
annotation('rectangle',...
    [0.184375 0.492227979274611 0.0953125 0.0621761658031088],'Color',[1 0 0],...
    'LineWidth',3);
```



The busiest are is -74<lat<-73.99 and 40.7485<lon<40.7495

```
figure
surf(xedges,yedges,tab,C,'linestyle','none')
colormap jet
colorbar
xlabel('longitude')
ylabel('latitude')
zlabel('total number of person trips')
title('See from above')
xlim([-74,-73.95])
ylim([40.725,40.775])
```


See from above
×10^4
2.5
2
1.5
1
0.5
0
total number of person trips
40.77
40.76
40.75
40.74
40.73
latitude
-74
-73.99
-73.98
-73.97
-73.96
longitude
×10^4
2
1.5
1
0.5