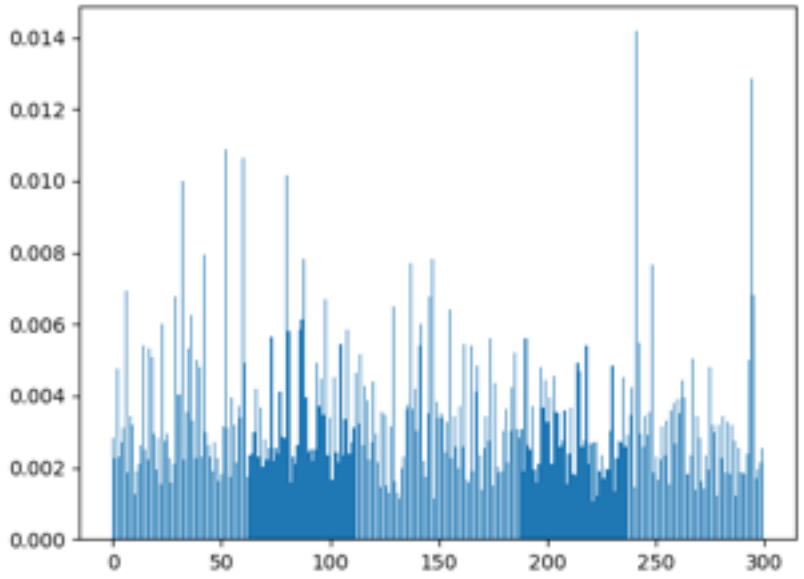
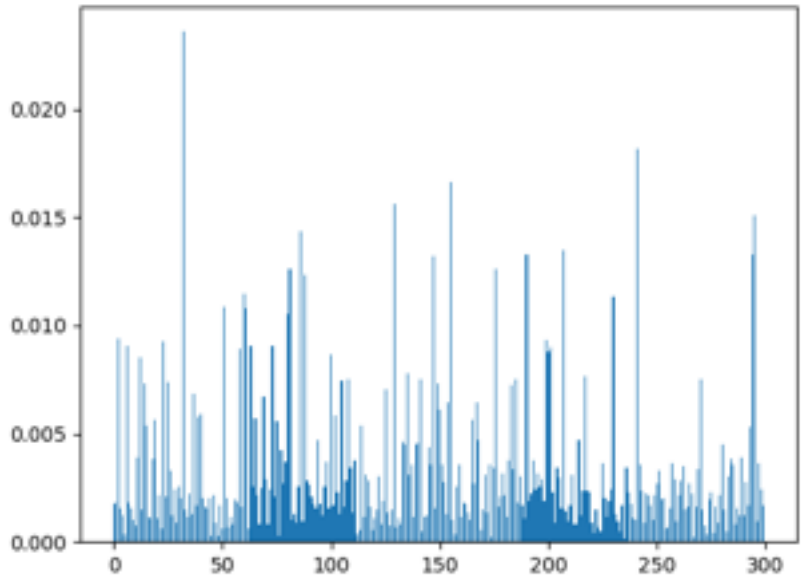
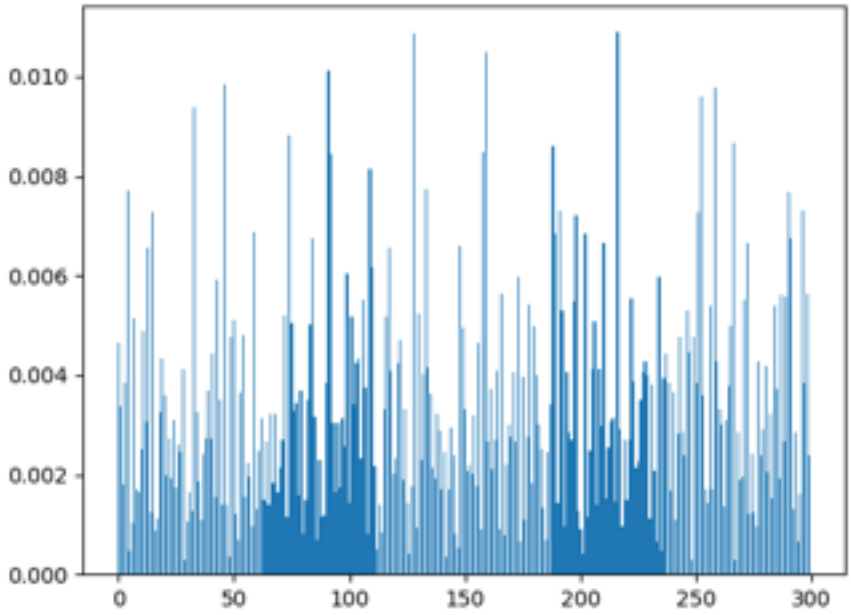
4.
For training images
Bedroom:



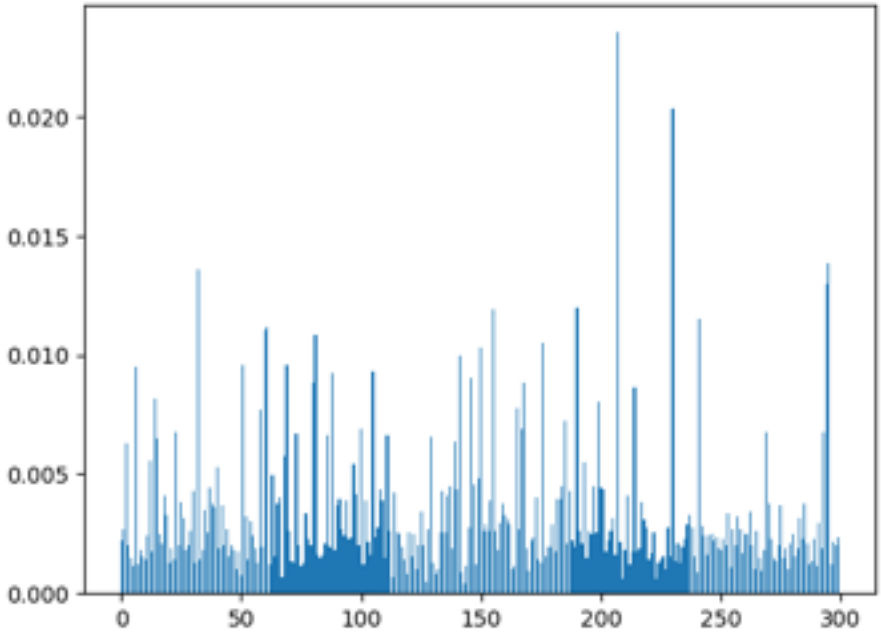
Coast:



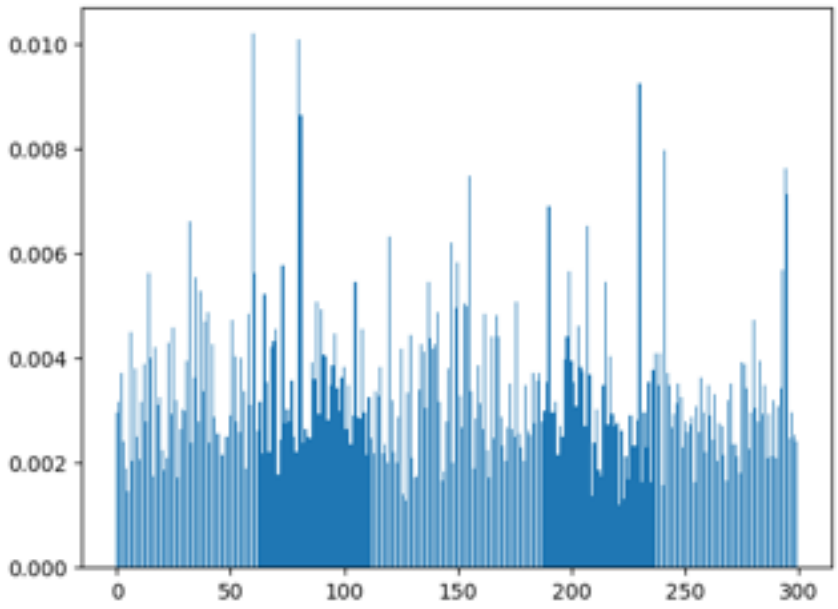
Forest:



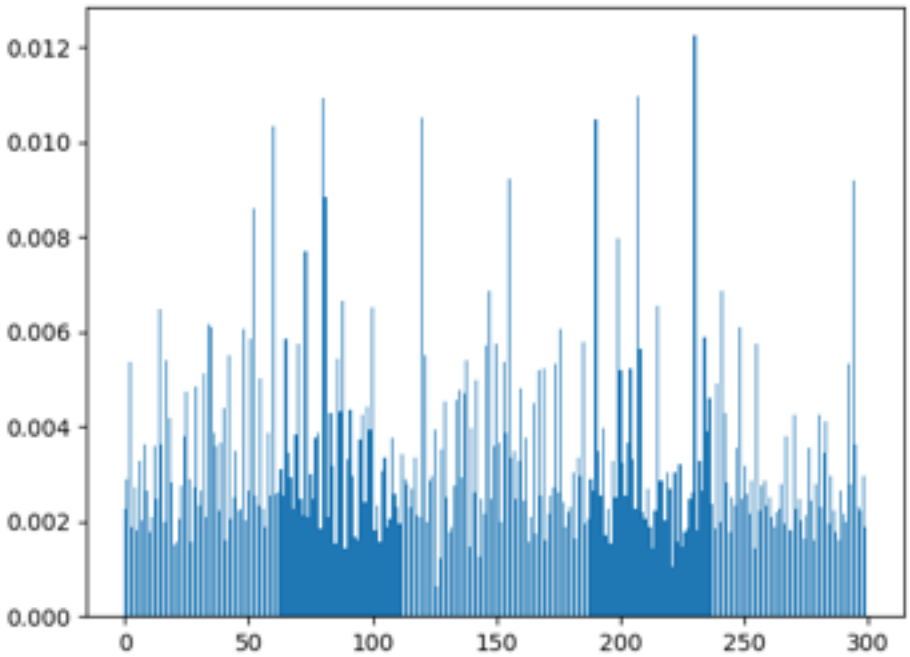
Highway:



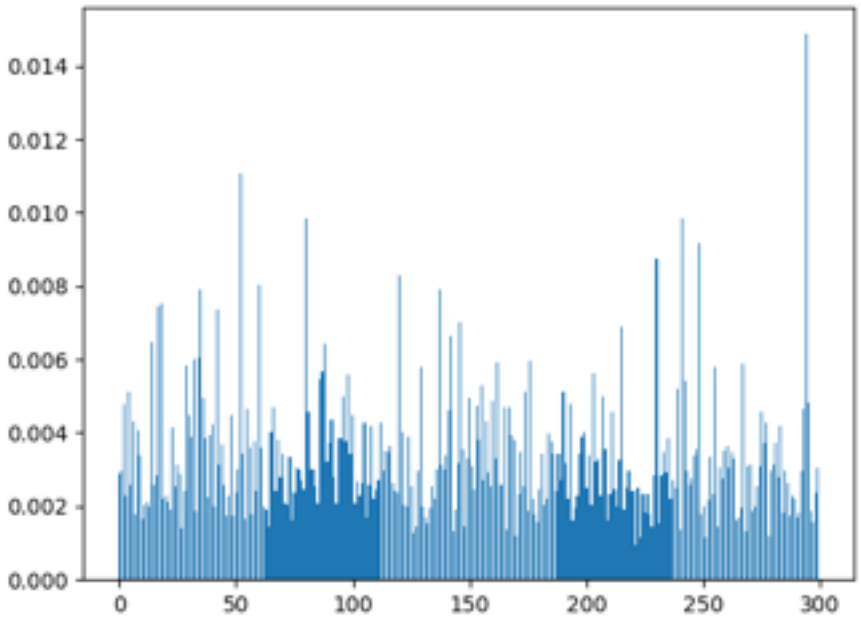
Industrial:



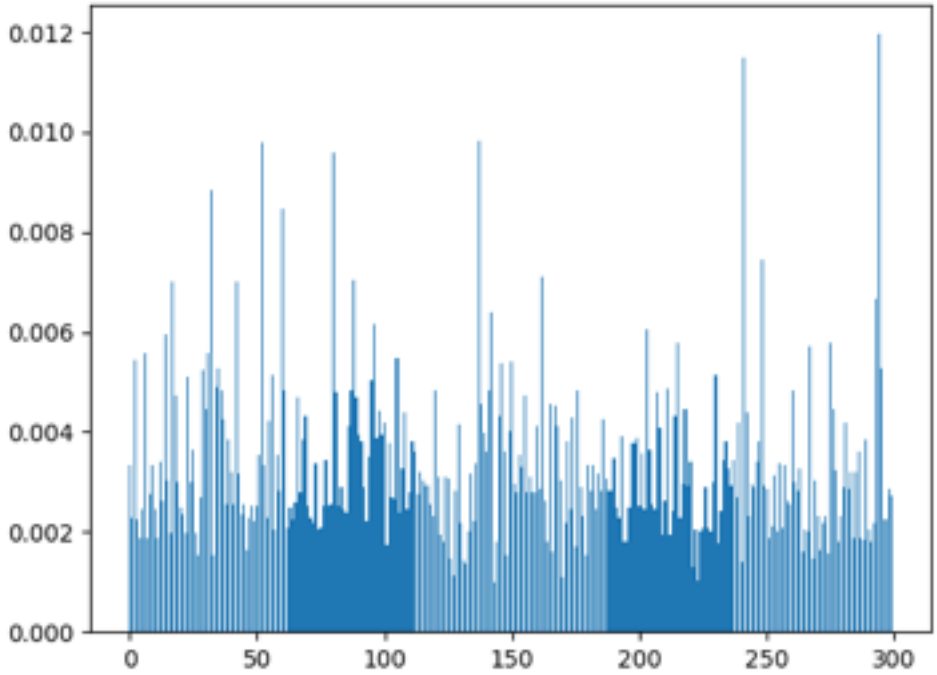
InsideCity:



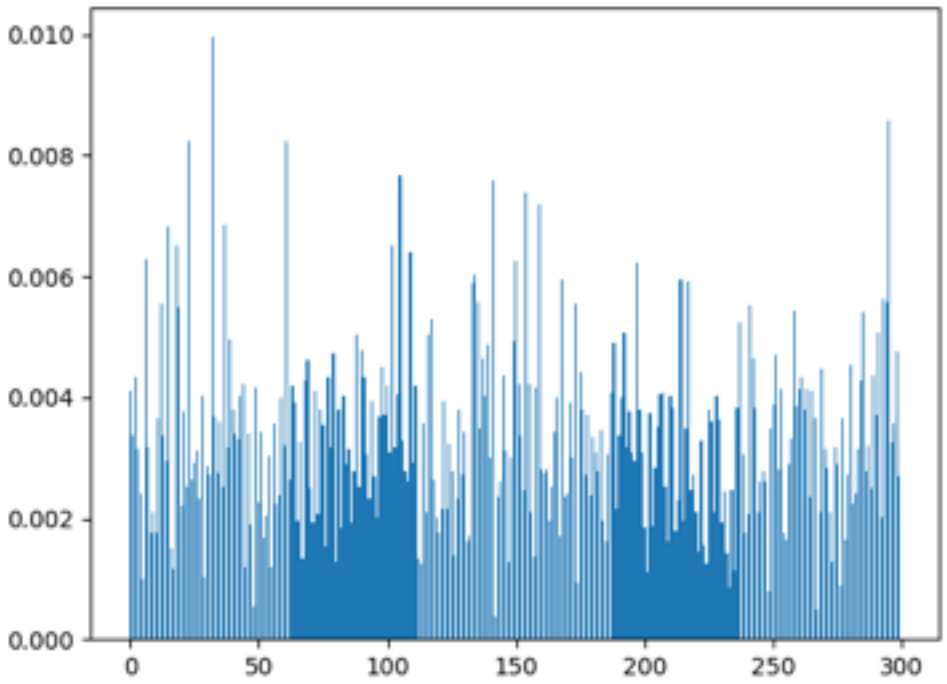
Kitchen:



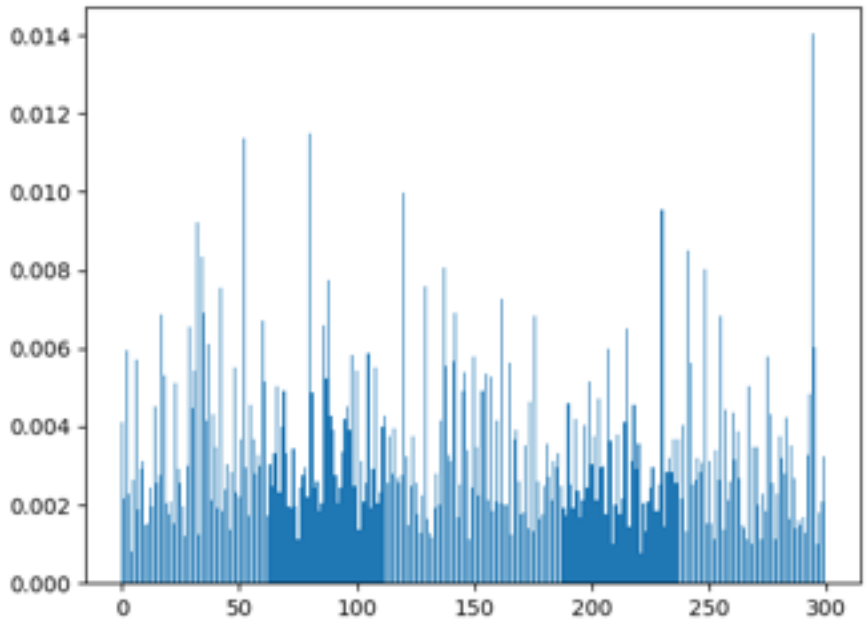
LivingRoom:



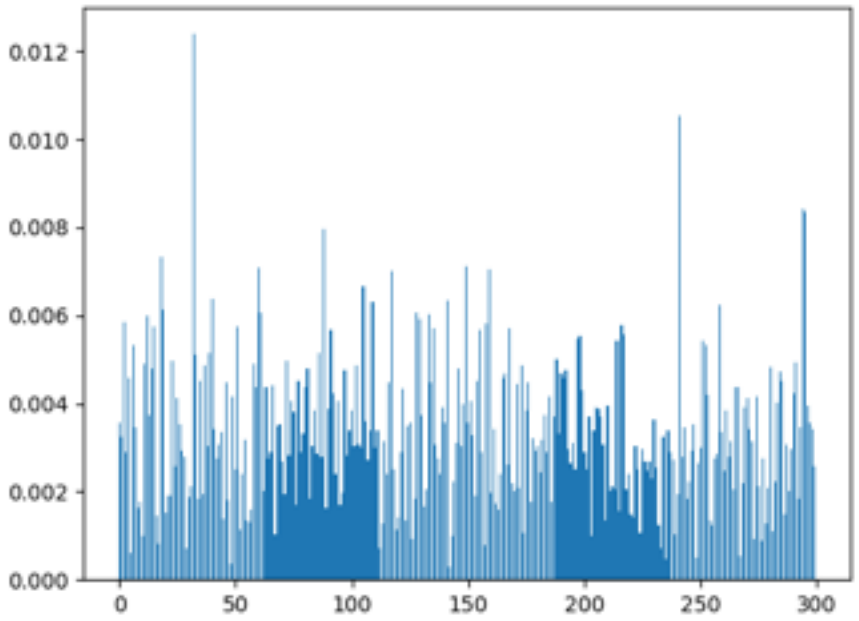
Mountain:



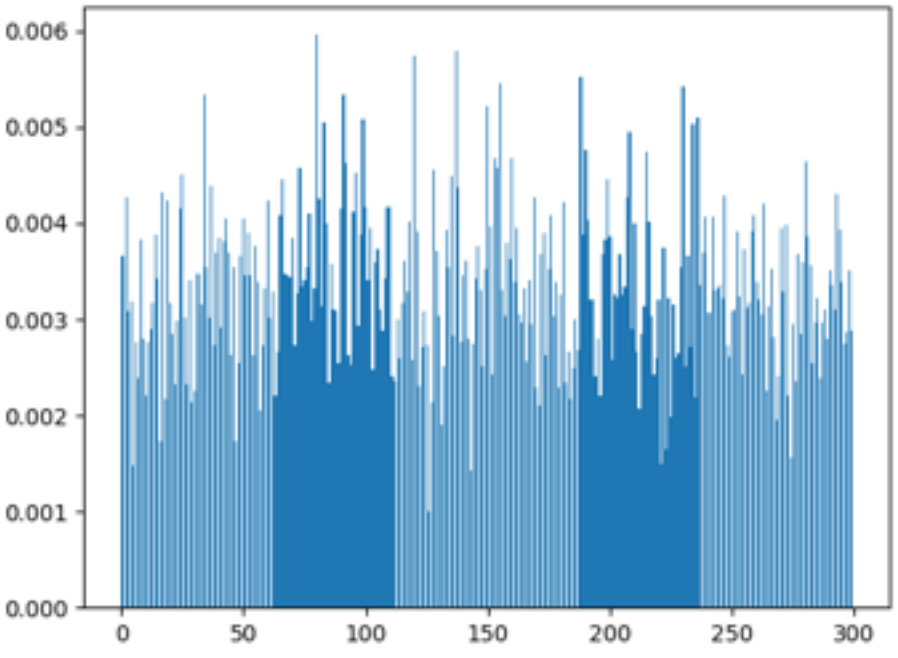
Office:



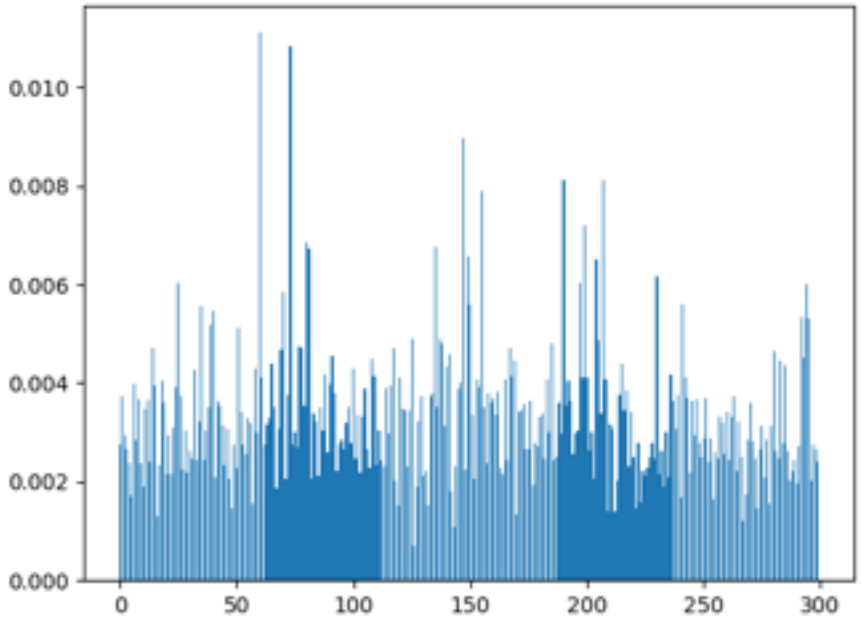
OpenCountry:



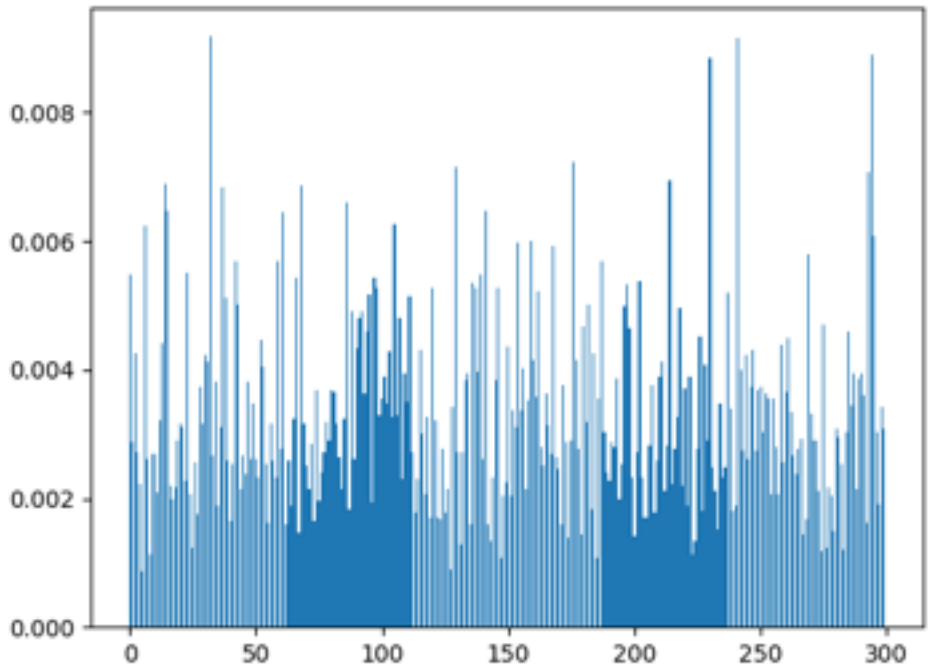
Store:



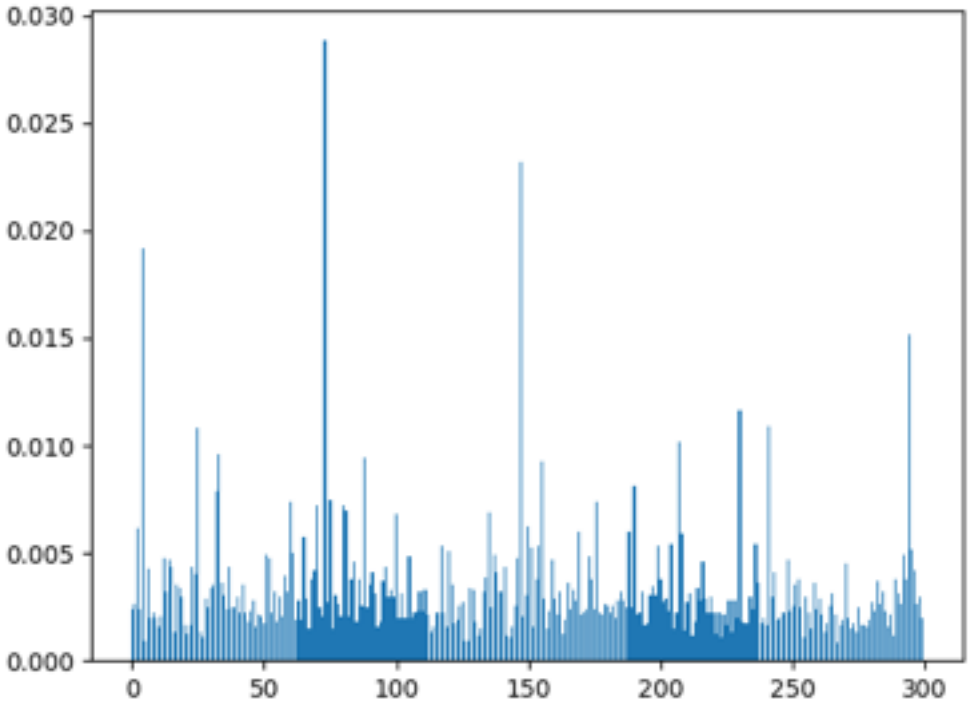
Street:



Suburb:



TallBuilding:

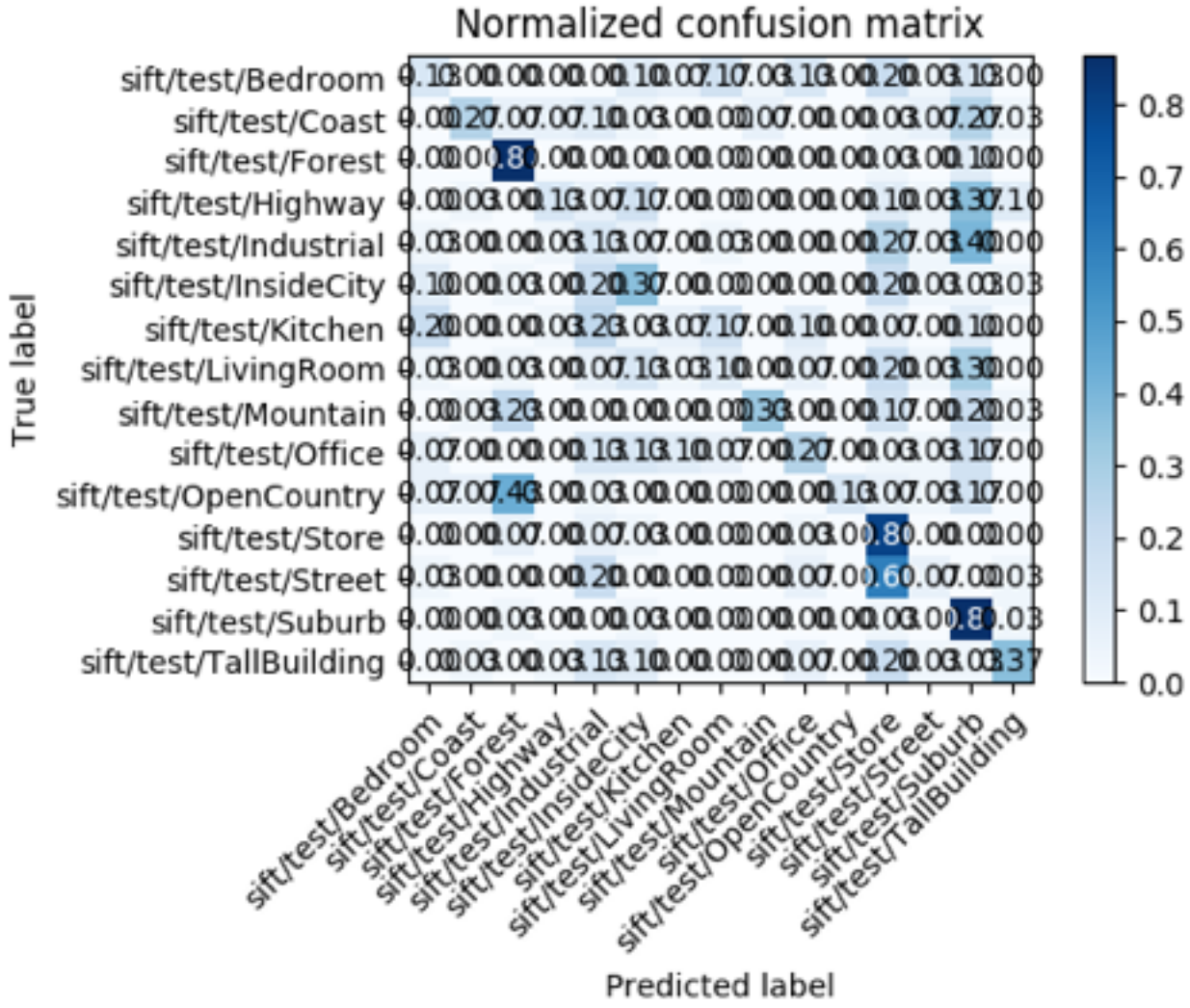


The distribution and scale of those histograms are various for each cluster. Some of them have most features with almost uniform distribution like Store.
Some of them very very high value for some of its features like TallBuilding, Coast. Other histograms has most uniform distributed features and a few high value features.
The two histograms which are very similar are the histograms of living room and bedroom. The reason for this may because, the consist of living room and bedroom may be very similar, since they are both rooms. Since they have many similar features, such as they may all contains sofa,table,chairs…, this may makes it hard to distinguish bedroom from living room.

5. Analyze for K

choose k = 4:

accuracy = 0.3266666666;

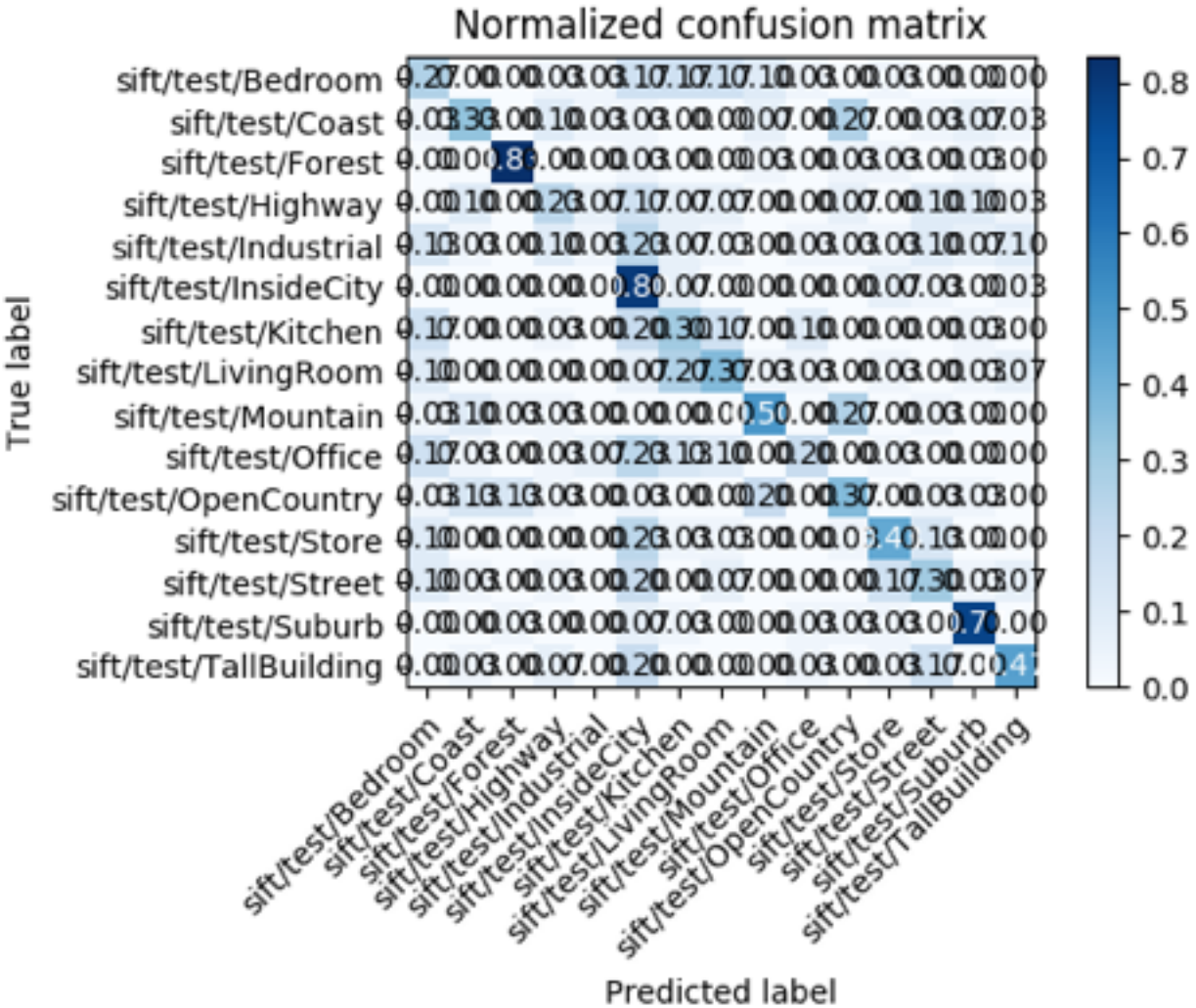


Choosing the vocabulary size to 300
For different K values: when I increasing the k value from 2, 3, 4, 5. I found that the accuracy increases when 2->3->4, but decrease 4->5. And when I set k to very large number k = 100, I got accuracy = 0.322 which is not bad, but when I set k = 1000, the accuracy = 0.14 which is really bad, this may because it considered too many neighbours that almost consider neighbours who are very far away from it, which doesn't make sense.

6. Analyze for C

choose C = 1000

accuracy = 0.4444



Changing the size of C:
when I set the c value from 0.1->0.2->0.3->0.4->0.5->0.6, the accuracy increases from 0.346->0.355->0.36->0.366->0.37 it increase with C.
when I set it to 10, accuracy = 0.4044, which is much better.
Then I try very large c = 10000, I found the accuracy become much bigger about 0.44.

There are other factors that influence our output.
the vocabulary size, I found when it increase the result also become better, and since when building the bag we randomly choose the sample, the output also depend on the choosing of each time.