

Assignment 10 Report

Professor Nelson

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## Part 1

### 1.1 Using cosine to get the knn

To get the cosine between the 1000 dimension vectors, I replaced the euclidean() function with a cosine() function. The knnestimate() function uses this distance to compute the nearest neighbors.

```

2
3 def cosine(v1, v2):
4     sumxx, sumyy, sumxy = 0, 0, 0
5     for i in range(len(v1)):
6         x = v1[i]; y = v2[i]
7         sumxx += float(x)*float(x)
8         sumyy += float(y)*float(y)
9         sumxy += float(x)*float(y)
10    return 1-(sumxy/math.sqrt(sumxx*sumyy))
11
12 def getdistances(data, vec1):
13     distancelist=[]
14
15     for i in range(len(data)):
16         vec2=data[i]
17         try:
18             distancelist.append((cosine(vec1,vec2),i))
19         except:
20             pass
21
22     distancelist.sort()
23     return distancelist
24
25 def knnestimate(data, vec1, k=5):
26
27     dlist=getdistances(data, vec1)
28     avg=0.0
29     return dlist

```

## 1.2 Nearest Neighbors for f-measure

When  $k=1$ :

```
Nearest neighbors for http://f-measure.blogspot.com:
When k = 1
The McBlog: Dundee Tales
```

When  $k=2$ :

```
When k = 2
The McBlog: Dundee Tales
Ada Robinson Illustration
```

When  $k=5$ :

```
When k = 5
The McBlog: Dundee Tales
Ada Robinson Illustration
CAROL WEEKS SPEAKS!
My Journal, a homeschooling mom
Wabi Sabi Words
```

When  $k=10$ :

```
When k = 10
The McBlog: Dundee Tales
Ada Robinson Illustration
CAROL WEEKS SPEAKS!
My Journal, a homeschooling mom
Wabi Sabi Words
Misadventures and Whatnots
Until We Have Faces
The Cheney scene
c.o.n.s.t.a.n.c.e.
ycab
```

Whenk=20:

```
When k = 20
The McBlog: Dundee Tales
Ada Robinson Illustration
CAROL WEEKS SPEAKS!
My Journal, a homeschooling mom
Wabi Sabi Words
Misadventures and Whatnots
Until We Have Faces
The Cheney scene
c.q.n.s.t.a.n.c.e.
ycab
New Hope Family Worship Center
A Bucket of Grace
Life Long Learning Adventures
Welcome to Hope Abel's Blog
Amore More Ore Re
Dandelion Tea
tpaullee
.... Altion Days ....
Realities and Realizations
The Joy of Hope
```

### 1.3 Nearest neighbor for ws-dl

When k=1:

```
Nierest neighbors for http://ws-dl.blogspot.com/:
When k = 1
Built by Story
```

When k=2:

```
When k = 2
Built by Story
Vivian Paul's Blog
```

When k=5:

```
When k = 5
Built by Story
Vivian Paul's Blog
House of Glory
Welcome to Hope Abel's Blog
LoveGod.LovePeople.
```

When k=10:

```
When k = 10
Built by Story
Vivian Paul's Blog
House of Glory
Welcome to Hope Abel's Blog
LoveGod.LovePeople.
Wabi Sabi Words
Godava Blog
Valiant
in someone else's words
Jez & Carina Simpson
```

When k=20:

When k = 20  
Built by Story  
Vivian Paul's [Blog](#)  
House of Glory  
Welcome to Hope Abel's [Blog](#)  
LoveGod.LovePeople.  
[Wabi Sabi Words](#)  
[Godaya Blog](#)  
Valiant  
in someone else's words  
[Jez & Carina Simpson](#)  
F-Measure  
Our little blue heaven  
Anthology  
[ycan](#)  
Until We Have Faces  
Goddess Alchemy~A Priestess Journey  
Life Long Learning Adventures  
[Adalia's Poetry](#)  
[Karmanns Cotulla](#)  
[Gistcity Africa Media](#)