UI-case2

August 2, 2020

1 UI - Case 2 for Yelp User Modeling

2 - Expand more similar users from seed users

Before started this visualization, you shall have generated data by following this ReadMe file ReadMe file: https://github.com/hycinthgeo/YelpUserModeling by running python main.py Since nearest neighbor is an expensive computation with slower compute than cosine similarity, I randomly genearted

a subset of the raw user table, and

a subset of the transformed "allData" table, and

Please feel free to generate more test data, by enabling the following cell, and changing num_rand_members.

```
In [1]: # random generate subset of users
        import sys
        import pandas as pd
        import matplotlib.pyplot as plt

        sys.path.append('src/python')
        import random_generator as rg
        num_rand_members = 1000
        #rg.generate_random_case2_inputs(num_rand_members)

        io_config = pd.read_json("configs/data-pipeline.json", typ='Series')
        output_user_list = io_config["output path for user list-case2"]

        # raw user data with randomly selected records
        user_path_subset = io_config["data path for user table-case2"]
        raw = pd.read_csv(user_path_subset)

        # transformed data of features
        input_path_raw_data_subset = io_config["all transformed data-case2"]
        alldata = pd.read_csv(input_path_raw_data_subset)
```

2.1 Load recommended user_list prepared during main.py

```
In [2]: out_df = pd.read_csv(output_user_list)
        num_exact_match = len(out_df[out_df["user_source"] == "exact_match"])
```

```
out_df.loc[num_exact_match-2:num_exact_match+8]
```

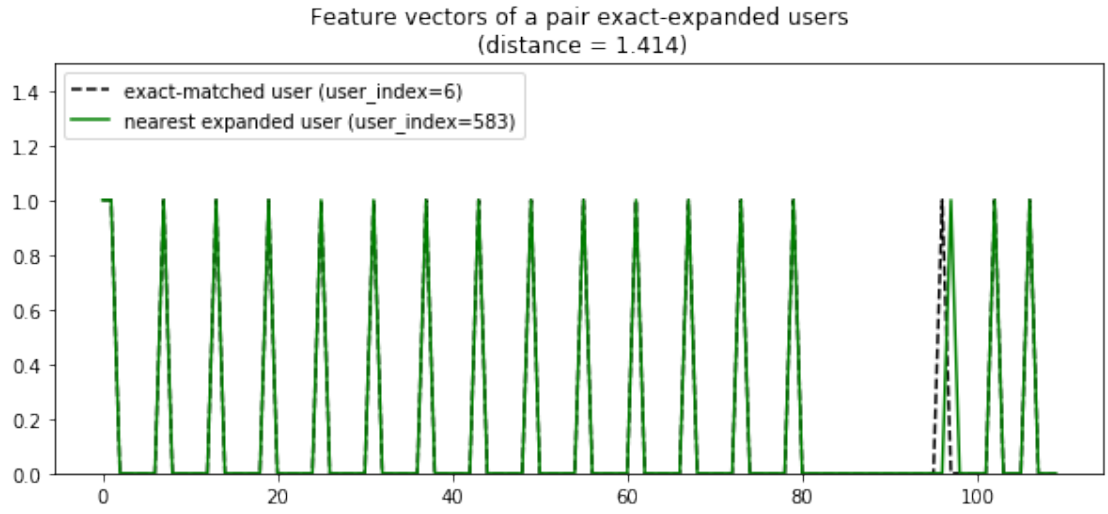
Out[2]:

	user_idx	dist_from_exact_match	user_source
64	995	0.000000	exact_match
65	997	0.000000	exact_match
66	583	1.414214	expanded-6
67	228	2.000000	expanded-29
68	355	2.000000	expanded-29
69	269	2.000000	expanded-44
70	919	2.236068	expanded-44
71	120	2.236068	expanded-44
72	273	2.645751	expanded-58
73	657	3.162278	expanded-58
74	208	3.316625	expanded-58

2.2 Detailed example picked from the first expanded audience with close distance to the exact match

In [3]:
```
# example
seed_id = 6
fig_setup = 110
fig = plt.figure(figsize = (10, 4))
fig.add_subplot(fig_setup+1)
plt.plot(alldata.loc[seed_id].values, '--k')
list_exp_user_idx = out_df[out_df['user_source'] == 'expanded-'+str(seed_id)]['user_idx'
list_exp_distance = out_df[out_df['user_source'] == 'expanded-'+str(seed_id)]['dist_from

for i, idx in enumerate(list_exp_user_idx):
    if idx != seed_id:
        plt.plot(alldata.loc[idx].values, '-g')
        plt.title("Feature vectors of a pair exact-expanded users\n (distance = %4.3f)"%
                  (list_exp_distance[i]))
plt.legend(['exact-matched user (user_index=%d)'%seed_id, "nearest expanded user (user_i
          loc="upper left")
plt.ylim([0, 1.5])
fig.subplots_adjust(hspace = 0.5)
plt.show()
```




```
In [4]: pd.set_option('display.max_colwidth', -1)
        print("raw info from User Table for user_idx = %d"%seed_id)
        raw.loc[seed_id]
```

```
raw info from User Table for user_idx = 6
```

```
Out[4]: average_stars    5
        compliments      {}
        elite            []
        fans             1
        friends          ['xX5Y2-Tp_4SuZea85DoINQ', 'Ky1BXFCOkUpWcIep3Im09w', 'LMGEfmk2Sn6ONgzcs
        name             Jim
        review_count     1
        type             user
        user_id          E6wju5MjKQEH22h7j7p7zg
        votes            {'funny': 0, 'useful': 0, 'cool': 0}
        yelping_since    2012-12
        Name: 6, dtype: object
```

```
In [5]: pd.set_option('display.max_colwidth', -1)
        print("raw info from User Table for the nearest expanded user %d from user_idx = %d"%\
              (list_exp_user_idx[0], seed_id))

        raw.loc[list_exp_user_idx[0]]
```

```
raw info from User Table for the nearest expanded user 583 from user_idx = 6
```

```
Out[5]: average_stars    4.75
        compliments      {}
```

```
elite            []
fans             1
friends          ['faUI7ljrmCAaBZfnE9Jefg', 'IQw7tFdFG9KRH7HlwrMyww', 'XywdfdjVPYLVtKpW0
name             herve
review_count     4
type             user
user_id          68lgvHzlLAJAuoxz6ByQug
votes            {'funny': 0, 'useful': 0, 'cool': 0}
yelping_since    2009-03
Name: 583, dtype: object
```

2.3 Summary

As demostrated in this case, besides the "yelping_since", other attributes are aligned, thus marked a quality expansion