COD891: Minor Project
Sem-II 2017-18
Project Report

Project Title:

IntelMark - Intelligent Marketing

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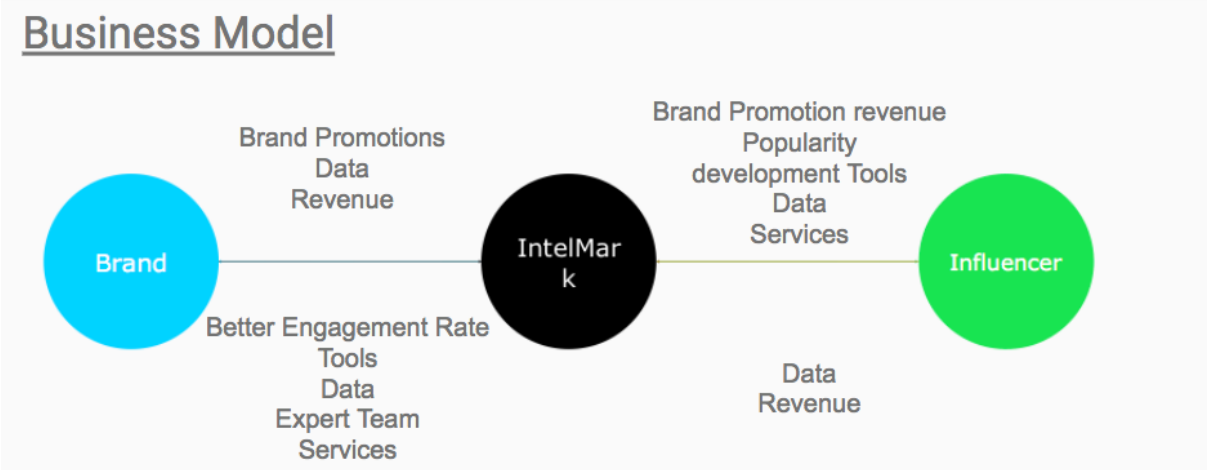
Problem :

- Rise of social media made customers more connected and empowered like never before.
- Business today face problems to get online engagement
- Brands today have lot of social media platforms to operate. Every social media platform requires its own team of expertise to operate
- Brands need understanding of sentiment of users for better brand communication.
- Continuous learning and applying and Automation

Solution formulation :

- We want to leverage the phenomenal growth of Social Community in a digitally growing country like us.
- We believe it provides digital renaissance brings far greater benefits than the traditional outdoor advertisement.
- We want to find the best (high-connecting) nodes in the digital community and help brands advertise through them. That's where our **digital solution** comes in...

IntelMark : A cross platform app that can help anyone grow their target audience & make their digital presence strong



Social Influencer Network :

- Our idea is to develop a filtered Social Network with nodes of high connectivity from various other Social Networks (Facebook, Instagram, youtube,Twitter)
- Our solution is a function of existing social network, a Social Influencer Network

Social Network ---> f(digital community)
IntelMark ---> f(social networks)

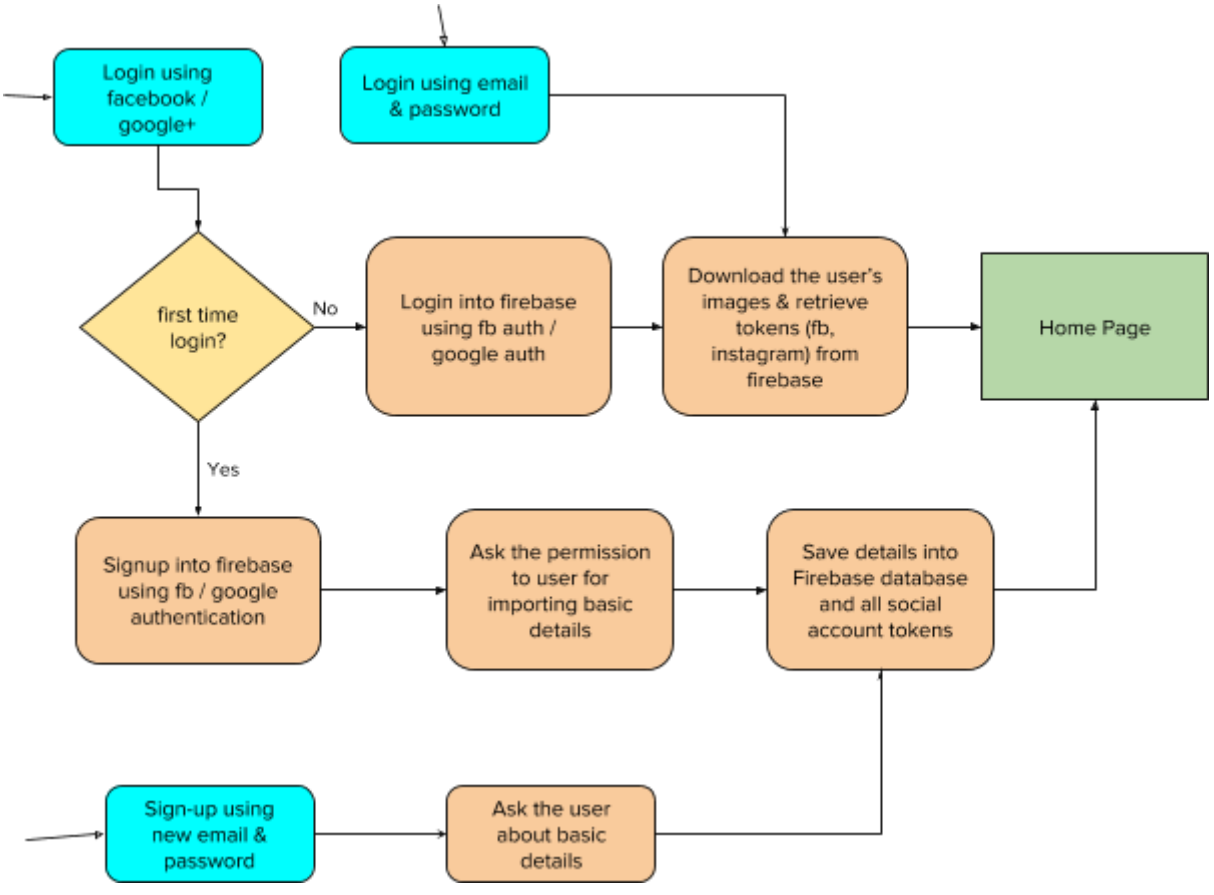
OSSA App :

We are developing mobile app named ossa for IOS & Android platform using React-native Language. This app is for creators/influencers to market a brand in Their audience intuitive way and get more Engagement through our tools.

The following features are used in this app:

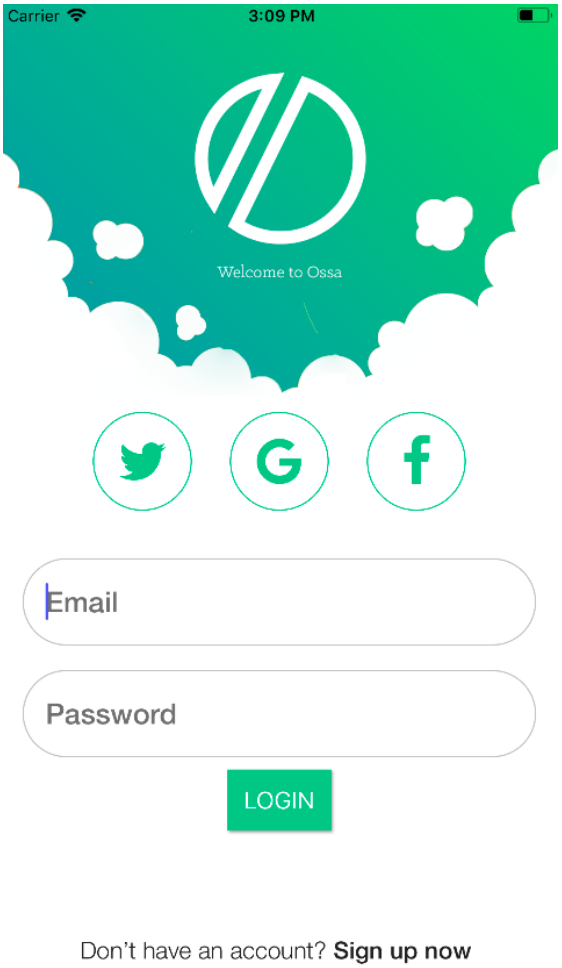
- HashTag generator
- Interactive Analytics/Insights Tool
- Sentimental analysis
- Recommendation
- Post media on social media directly at optimized time

App Flow Design: Firebase database server used

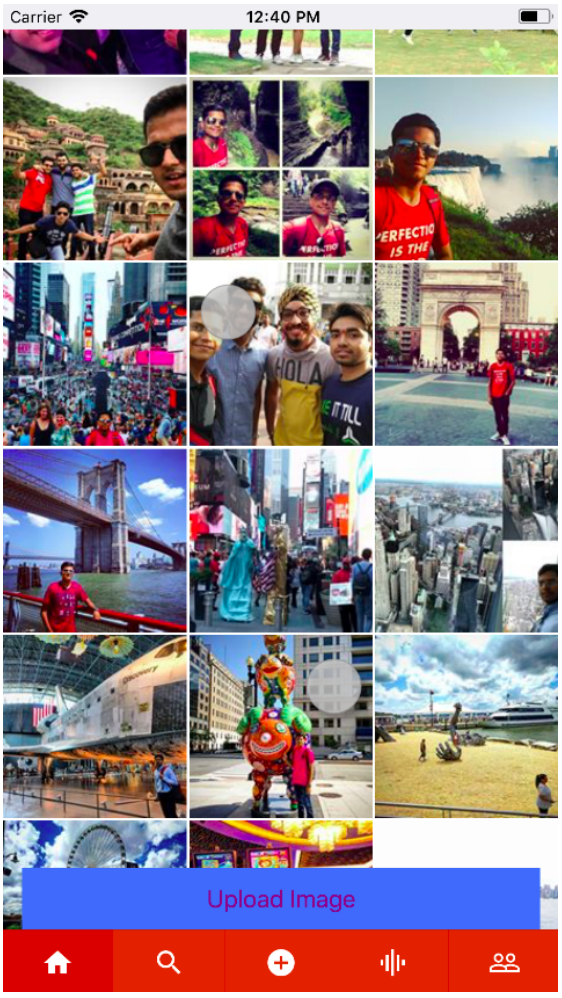


APP UI Layout

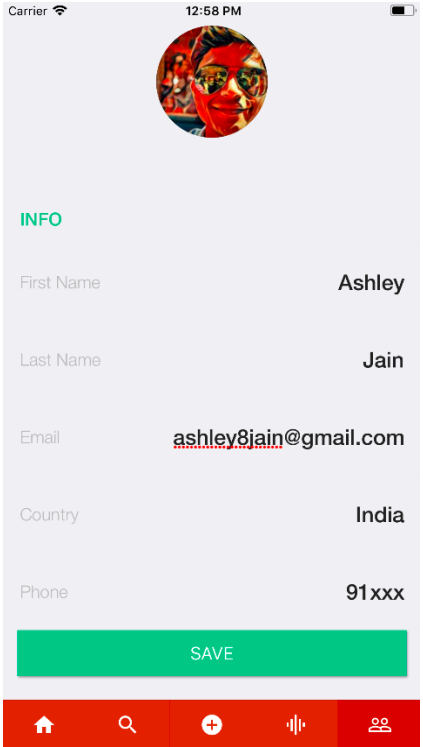
Login Page:



HomePage:

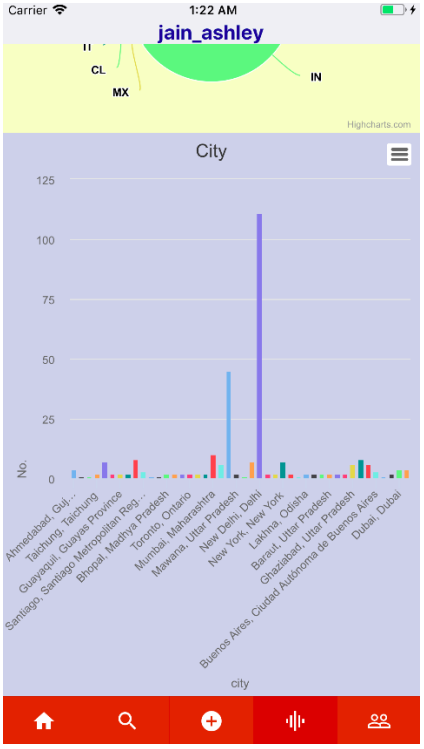


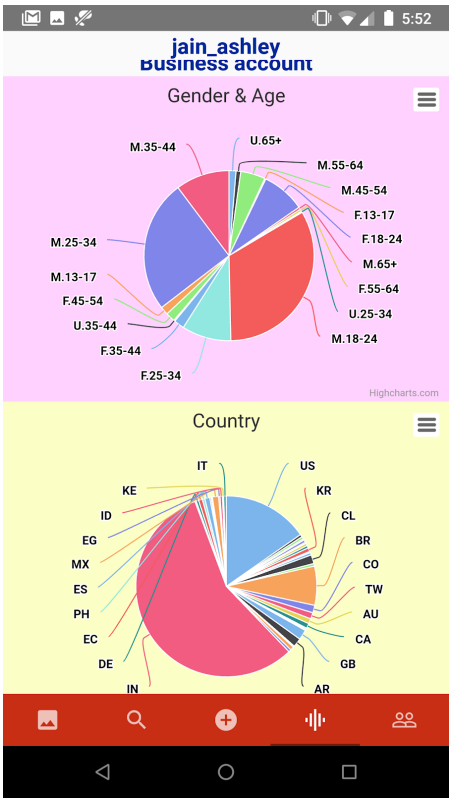
Profile Page:



Post Image page:

Insight/analytics page:





Analytics-Insights Tool:

- Import the User's Post data (including likes,comments), Followers(Relationship) data (including Age,gender,location) using Instagram API endpoints
- Classify the above datas for constructing graph on mobile app using highchart Library - code: Insight.js
- Type of graph
    - Gender and Age wise
    - Country & City wise
    - Engagement & Impression
- For identifying major categories of audience based on age & location

Recommendation Engine:

This is similar to the recommendations produced in any Social Network, like facebook recommending friends, pages, posts; LinkedIn suggesting companies, connections etc. We call this feature Collab where this adds seamless collaboration of various kinds of influencers in the network. We are planning to achieve it with neo4j Graph Database, since this is effective with reasonably good amount of data

Input data:

Two csv files:

users.csv -> columns (user_id, user_name) : contains the basic details of all users

follow.csv -> columns (follower_id, following_id) : contains the relationship datas

Code (Cypher Query language) :

- Import the user basic details (csv file)

```
LOAD CSV WITH HEADERS FROM "file:///users.csv" AS row
CREATE (n:User)
SET n = row,
        n.user_id = toInteger(row.user_id),
  n.user_name = row.user_name
```

- Display all the node(to check)

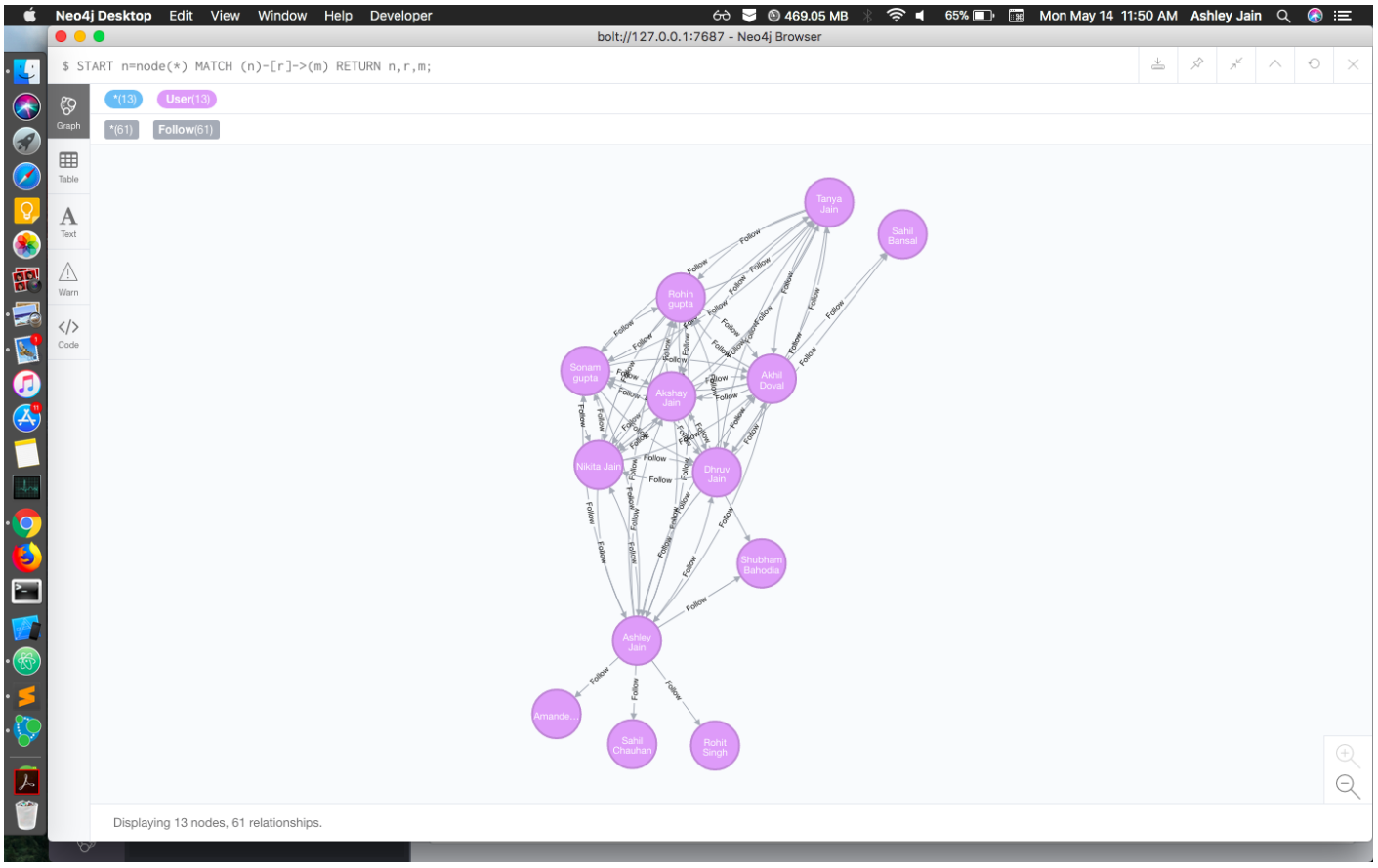
```
START n=node(*) RETURN n;
```

- Load the relationship data (csv file)

```
LOAD CSV WITH HEADERS FROM "file:///follow.csv" AS row
MATCH (u1:User {user_id:toInteger(row.follower_id)})
MATCH (u2:User {user_id:toInteger(row.following_id)})
CREATE (u1)-[:Follow {weight:1}]-> (u2);
```

- Displays the nodes and the relationships

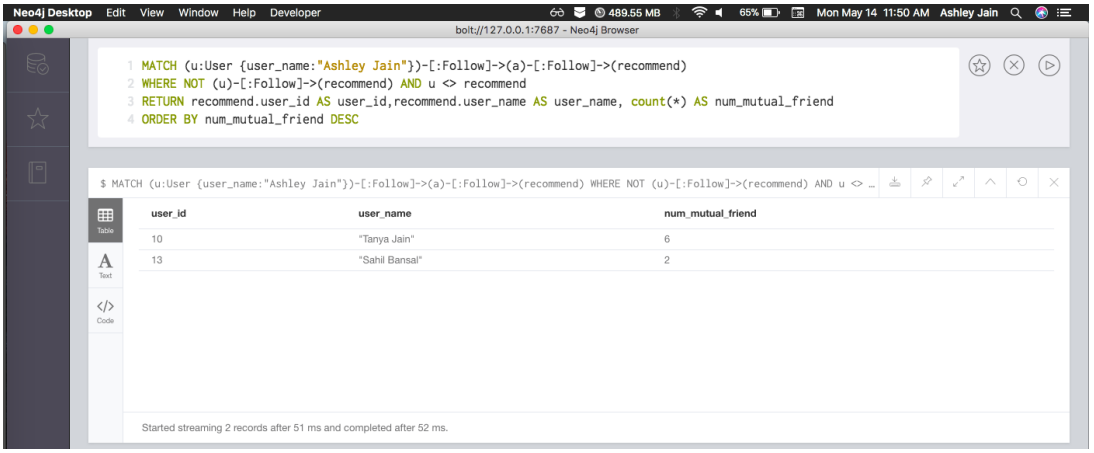
```
START n=node(*) MATCH (n)-[r]->(m) RETURN n,r,m;
```



- Recommend new friends for specific user

```
MATCH (u:User {user_name:"Ashley"})-[:Follow]->(a)-[:Follow]->(recommend)
WHERE NOT (u)-[:Follow]->(recommend) AND u <> recommend
RETURN recommend.user_id AS user_id,recommend.user_name AS
user_name, count(*) AS num_mutual_friend
ORDER BY num_mutual_friend DESC
```

Result:

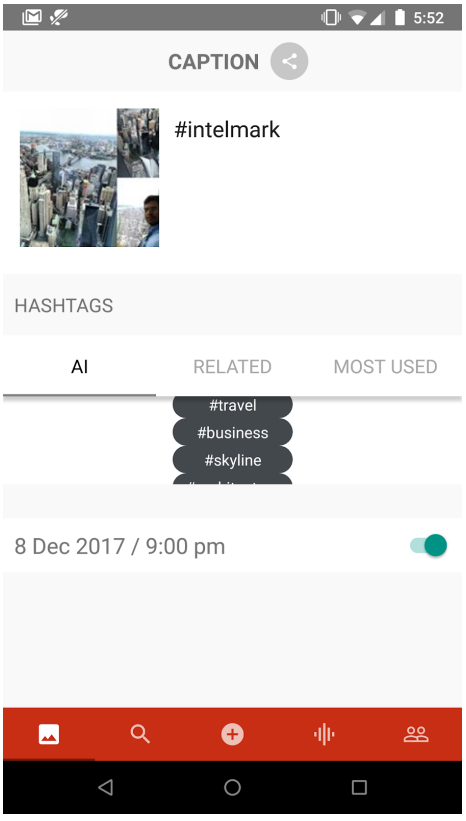

Neo4j Desktop Edit View Window Help Developer
489.55 MB
65%
Mon May 14 11:50 AM Ashley Jain
bolt://127.0.0.1:7687 - Neo4j Browser
1 MATCH (u:User {user_name:"Ashley Jain"})-[:Follow]->(a)-[:Follow]->(recommend)
2 WHERE NOT (u)-[:Follow]->(recommend) AND u <> recommend
3 RETURN recommend.user_id AS user_id,recommend.user_name AS user_name, count(*) AS num_mutual_friend
4 ORDER BY num_mutual_friend DESC
$ MATCH (u:User {user_name:"Ashley Jain"})-[:Follow]->(a)-[:Follow]->(recommend) WHERE NOT (u)-[:Follow]->(recommend) AND u <> …
Table
Text
Code
user_id
user_name
num_mutual_friend
10
"Tanya Jain"
6
13
"Sahil Bansal"
2
Started streaming 2 records after 51 ms and completed after 52 ms.

HashTag Generator:

- HashTag generator using Image Recognition API

While posting the image on social media, we need to write the hashtag for better engagement with audience. Hashtag can be generated based on Image recognition to help the user save time and effort for search of the better hashtag. So, Hashtag would be generated automatically using Image recognition API - clarifai library

Firstly, Upload image to clarifai server. Then we will get the image description in the form of JSON array using clarifai API endpoints.

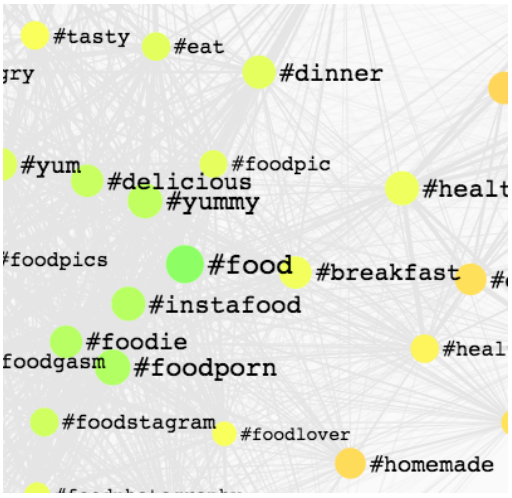


The hashtags for the given Image are shown in medium section of layout - “AI” tabs

- HashTag Embeddings using ML - KNN API

Moreover, topmost hashtag are used by many user in Instagram and twitter for easily reach out to audience. So topmost hashtag for the given input word can be generated in the app directly using Hashtag embeddings to help the user to save time instead of searching topmost

hashtag on internet while posting every post on social media.
Ex:- Input: food -> Output: foodporn, foodlover, foodblogger



HashTag Embedding: It is the recommending (suggesting) one or more hashtags to explicitly tag a post made on a given social network platform, based upon the content of the post. Suggestion of the topmost hashtags can be done by using **k-nearest neighbours** field in Machine Learning on huge amount of hashtags (2 billion almost) deployed on the site (open source). Therefore, we can use the given the API endpoint for mobile app to get topmost hashtags (shown in the video - “related” tab of posting image layout)

- HashTag selector Interface

This is the user easy interface on mobile app - selecting the hashtags - copied to the caption. Look at the demo of app - video link

Github code:

https://github.com/ashley8jain/ossa

Future Plan

- Will include other social channel like youtube, twitter, etc to form single filtered social community
- Enhance Recommendation feature

    - Different divisions of influencers have different requirements. And they need these in time to generate engaging content for Brands.
    - For example : Fashion Designer needs the help of a Photographer.
    - We wish to help them save their time and effort for search of the resources
- Sentimental Analysis