# PROJECT-1 SOCIAL MEDIA DATA ANALYSIS

August 16, 2020

Sughosh Jahagirdar and Sanjay Vishal Velmurugan

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### I Introduction

The Fake News needs to be classified with three labels namely "agreed", "disagreed" and "unrelated". Data We have chosen Twitter as our social media platform and have scrapped data from it using APIs.

### II DATA COLLECTION

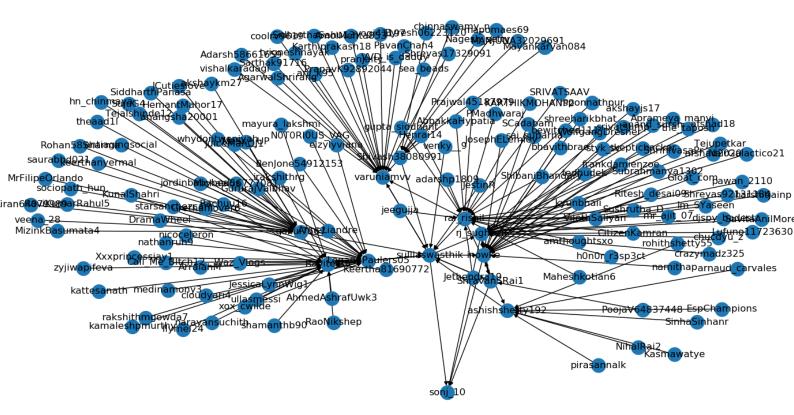
To collect data from Twitter, we completed the following steps:

- 1. Create a developer account on twitter.
- 2. Obtain 4 pieces of information: API key, API secret, Access token and Access token secret.
- 3. Use tweepy library in python to access twitter data with the help of authentication details we obtained in the last step.
- 4. To collect the data in the csv file, run the python file named main.py in the terminal.
- 5. Now, the node\_relations.csv file consists of a list of followers and their respective followers while the nodes.csv file consists only the list of all nodes present in the graph.

## III DATA VISUALIZATION

- 1. We used the package 'networkx' to visualize the graph.
- 2. We added the directed edges between the nodes using the data present in the csv file.
- 3. The directed graph will be displayed when main.py is run in the terminal.

**Figure 1:** Visualization of the data in the form of a directed graph

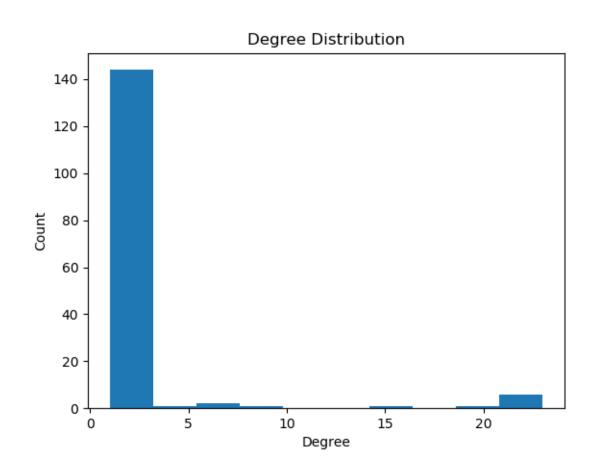


## IV NETWORK MEASURES CALCULATIONS

We have calculated 3 different network measures:

- 1. Degree Distribution
- 2. Average Clustering Coefficient
- 3. Closeness Centrality
- 4. Page Rank

Figure 2: Degree Distribution Histogram



#### **Output:**

1. Average Clustering Coefficient: 0.015951246649706787

#### 2. Closeness Centrality of all the nodes:

'sulliaswasthik': 0.43716129032258066, 'sonj 10': 0.37530266343825663, 'Shravan-SRail': 0.35665839536807276, 'inowke': 0.38735810534912213, 'rj sughosh': 0.3873581053491221 'varuniamvv': 0.3422963123331168, 'rai rishil': 0.12903225806451613, 'ashishshetty192': 0.1053763440860215, 'venky\_\_ 9': 0.0, 'LogangPaulers05': 0.12903225806451613, 'gokul7567': 0.12903225806451613, 'RavitejRh': 0.32623976889744827, 'Shivash38080991': 0.03870967741935484, 'JestinR': 0.0, 'PoojaV64837448': 0.0, 'tedhudek': 0.0, 'styk tv': 0.0, 'bhavithbrao': 0.0, 'srivatsamp': 0.0, 'bewitched111': 0.0, 'skeptichacker': 0.0, 'SCadabam': 0.0, 'Ritesh desai09': 0.0, 'frankdamienzoe': 0.0, 'JosephELemley': 0.0, 'WolfgangDresner': 0.0, 'Gloat com': 0.0, 'shreeharikbhat': 0.0, 'namithap': 0.0, 'Subrahmanya1302': 0.0, 'ShrinivasaPr': 0.0, 'sai suparna': 0.0, 'akshayjs17': 0.0, 'Shreyas92131184': 0.0, 'Aprameya\_manvi': 0.0, 'Tejupetkar': 0.0, 'NairGalactico21': 0.0, 'afshad2020': 0.0, 'pawan 2110': 0.0, 'Im SYaseen': 0.0, 'afshad18': 0.0, 'djspy badest': 0.0, 'chucdyu z': 0.0, 'SavitaAnilMore': 0.0, 'crazymadz325': 0.0, 'Lufuno11723630': 0.0, 'harshitjainp': 0.0, 'anand sursh': 0.0, 'the taposh': 0.0, 'VVD is daddy': 0.0, 'Shreyas17329091': 0.0, 'ani k95': 0.0, 'Henrai14': 0.0, 'SidharthaSahu13': 0.0, 'pranjalty': 0.0, 'AmolMehta853': 0.0, 'Sarthak91716': 0.0, 'yogi41197': 0.0, 'sea beads': 0.0, 'tvigneshnayak': 0.0, 'Adarsh58661659': 0.0, 'AgarwalShrirang': 0.0, 'PranavK92892044': 0.0, 'coolrv9619': 0.0, 'vishalkaradagi': 0.0, 'PavanChan4': 0.0, 'Karthiprakash18': 0.0, 'CitizenKamran': 0.0, 'KARTHIK-MOHANP2': 0.0, 'amthoughtsxo': 0.0, 'Prajwal45187979': 0.0, 'h0n0r r3sp3ct': 0.0, 'gupta siddhant': 0.0, 'kyunbhaii': 0.0, 'Jethendra19': 0.0, 'Sushrutha D': 0.0, 'rsponnathpur': 0.0, 'jeegujja': 0.0, 'PMadhwaraj': 0.0, 'AbbakkaHypatia': 0.0, 'VijethSaliyan': 0.0, 'SRIVATSAAV': 0.0, 'mr ajit 07': 0.0, 'adarshp1809': 0.0, 'ShibaniBhandary': 0.0, 'Maheshkotian6': 0.0, 'NihalRai2': 0.0, 'SinhaSinhanr': 0.0, 'Kasmawatye': 0.0, 'pirasannalk': 0.0, 'rohithshetty55': 0.0, 'arnaud carvales': 0.0, 'EspChampions': 0.0, 'Call Me BItch12': 0.0, 'cloudyari4': 0.0, 'ArraiahM': 0.0, 'medinamony3': 0.0, 'AnneLiandre': 0.0, 'NOTORIOUS\_VAG': 0.0, 'xox\_cwilde': 0.0, 'elzylyviana': 0.0, 'JessicaLynnWig1': 0.0, 'BenJone54912153': 0.0, 'whydontweniyah': 0.0, 'Xxxprincessjay1': 0.0, 'JuiceManOJ1': 0.0, 'jordinbabybeaus': 0.0, 'Michael56777081': 0.0, 'Grethanlover6': 0.0, 'nathanruh9': 0.0, 'DramaWheel': 0.0, 'starsanchezcarr': 0.0, 'Waz Vlogs': 0.0, 'JCutieslove': 0.0, 'MrFilipeOrlando':

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#### 3. Page rank of all the nodes:

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