# Who Follows Trump on Twitter?

A Graphical Approach to Social Media Analysis

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# Terminology

- Follower vs. Friend
- Network = Graph NOT neural/deep network!
- Nodes: Like an object. Any Twitter user will be represented as a node
- Edges: Links between nodes. An edge from node A to node B means user A follows user B.
- Degrees: the total number of connections someone has (followers + friends).

# What Aspect of Trump's Followers to Analyse?

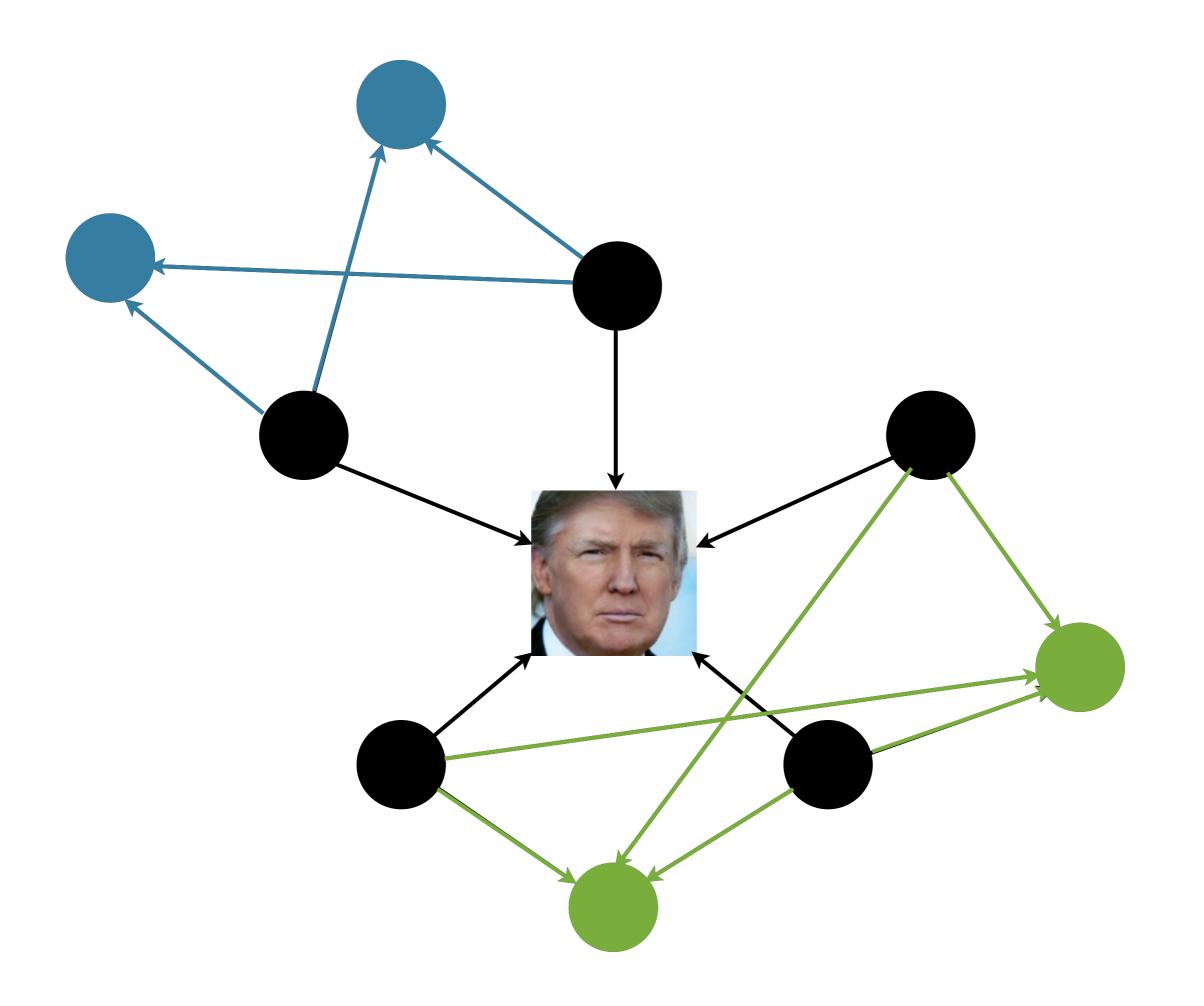
- The words they use in their Tweets? NLP
- Their profile photo? Image processing, deep learning
- Their friends? Network analysis
- geo location, URL sharing, retweet patterns, #Hashtags etc.

Each answers a potentially different question!

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Answers: "Who else do they follow?"



### Tools

 Python's NetworkX and the community library: to answer the question

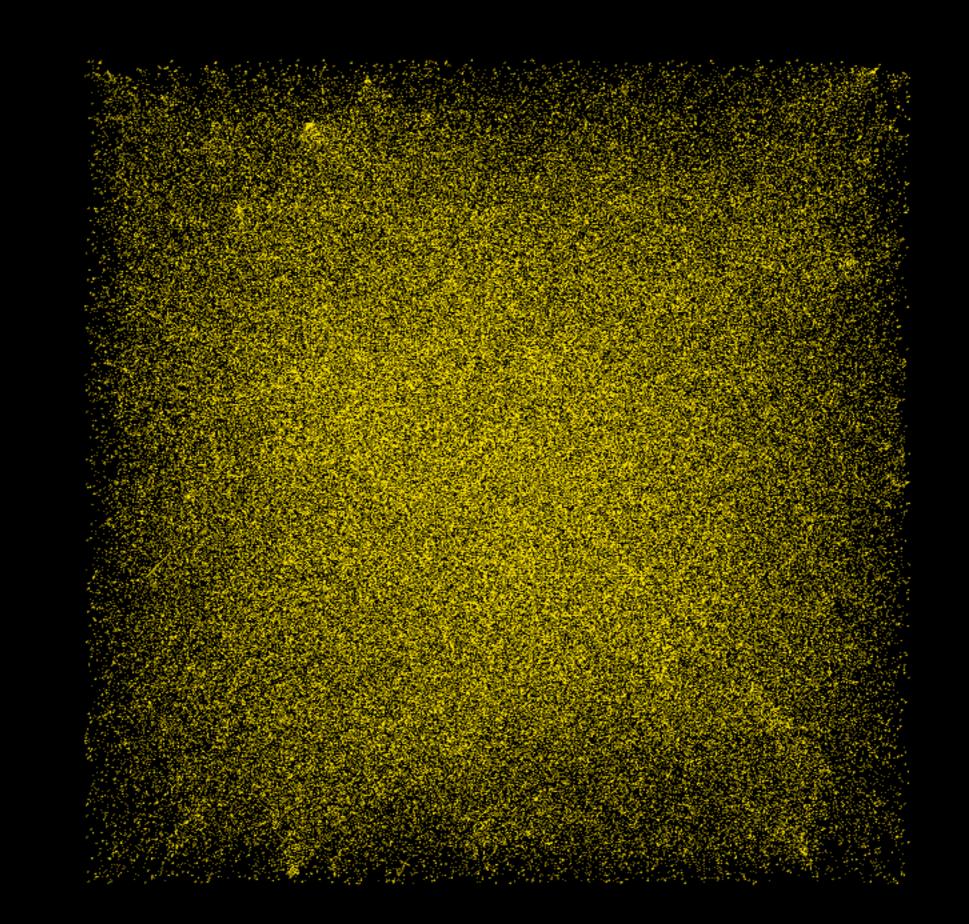
 Gephi: to explore and visualise the network

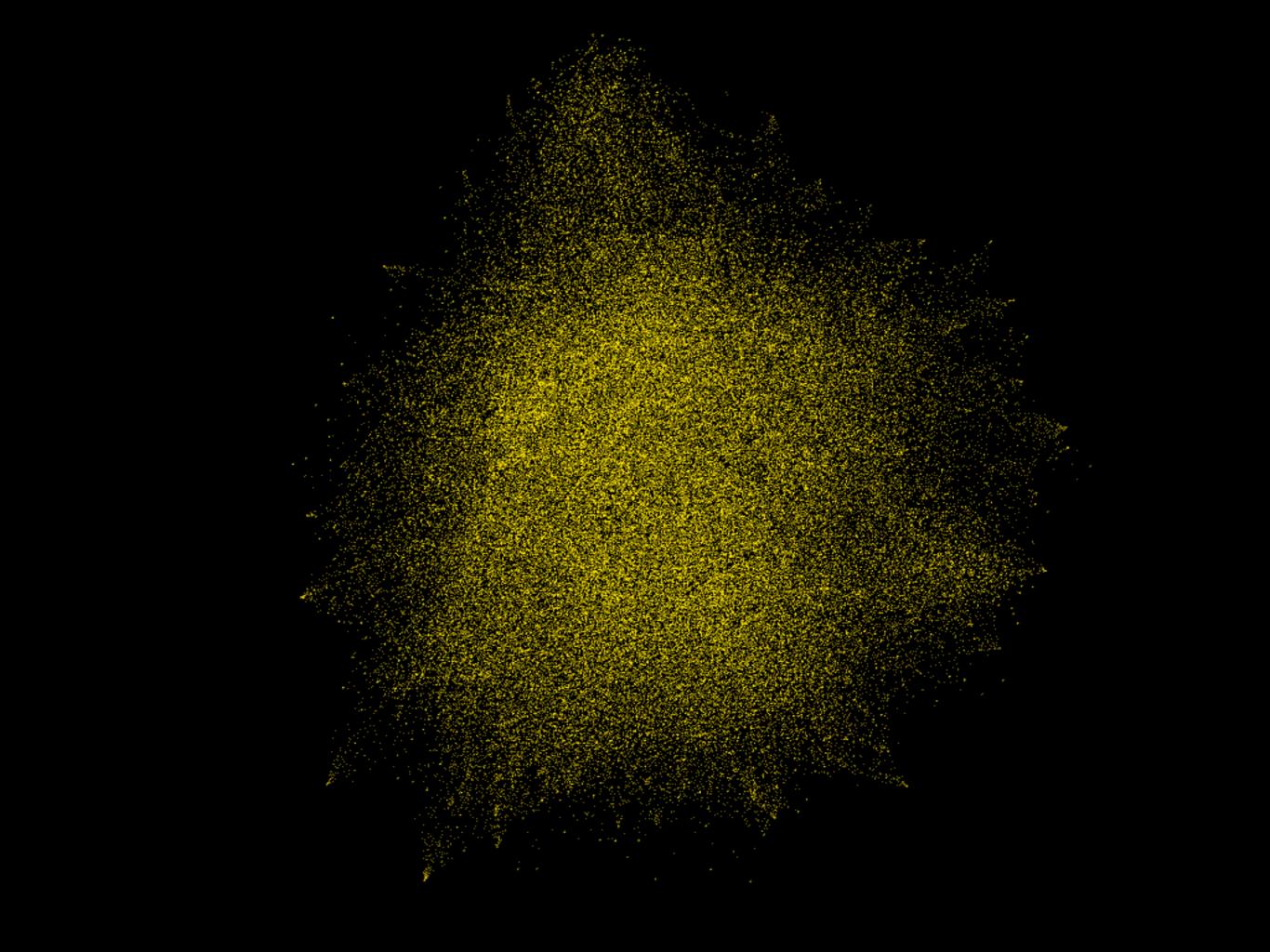
### The Data

- Got all of Trump's followers on 05/06/2016 8.6 million
- Randomly sampled 12902 Trump followers and got all of their friends
- Total number of nodes: 2 million
- Total number of edges: 4.5 million

### The Data

- Outliers:
  - Only follows Trump or 10K other friends
  - Super nodes
- After removing outliers:
  - Number of Trump followers left: 8178
  - Number of nodes: 48K
  - Number of edges: 814K





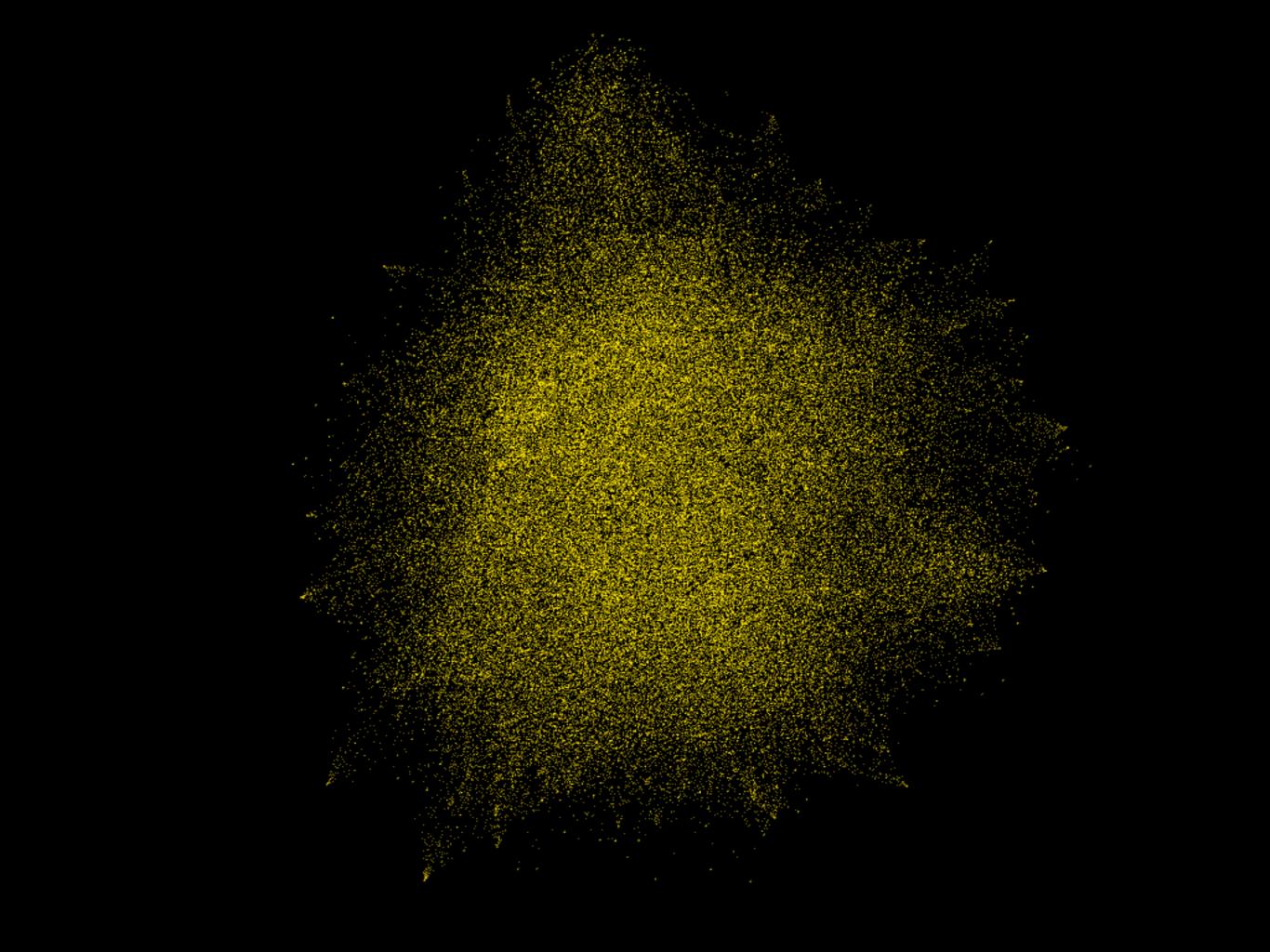
# Community Detection

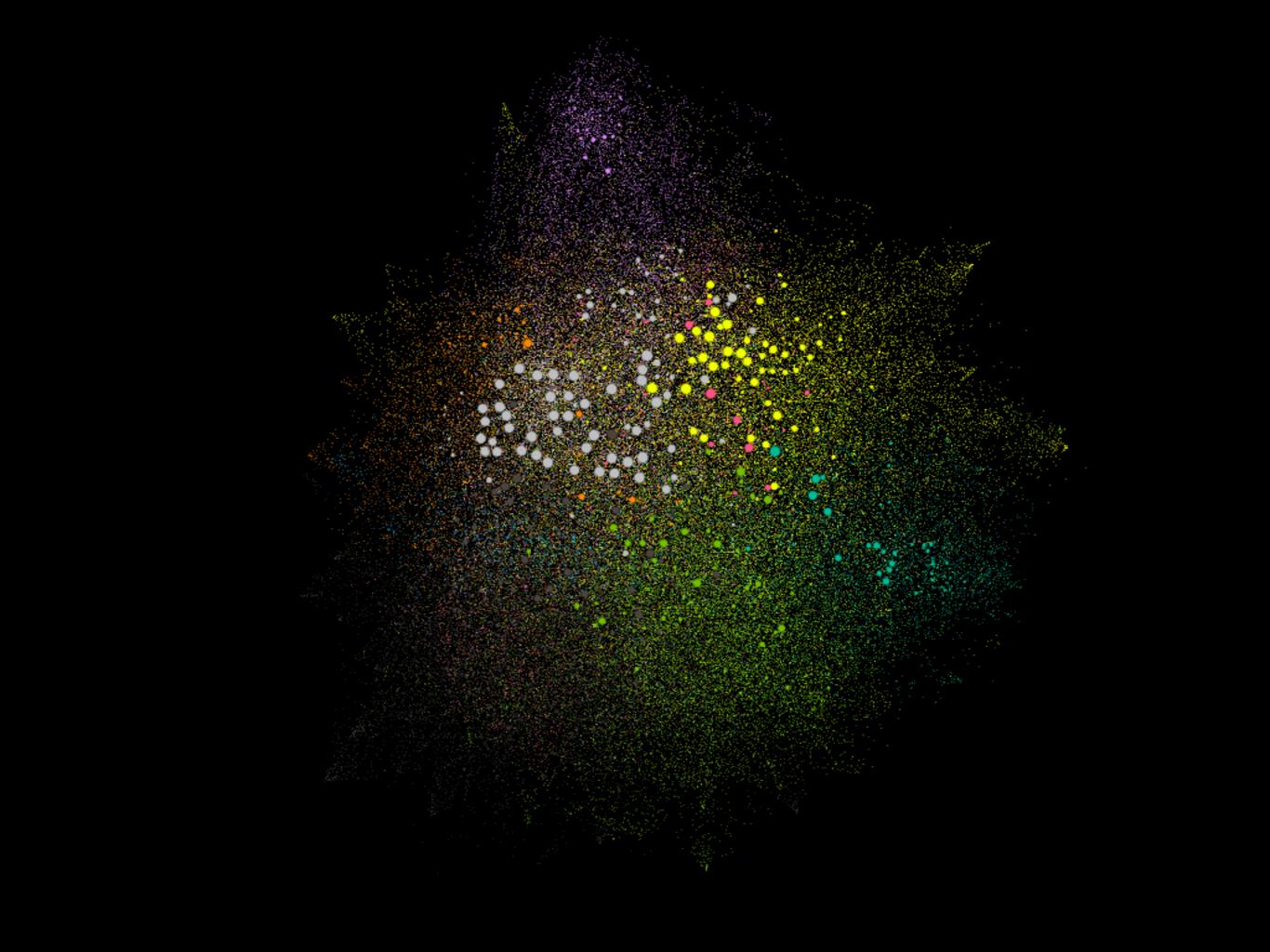
- Assign each node to one and only one community based on the network's structure
- Clustering!
- Louvain Modularity (Blondel et al. 2008)
  - Super fast!
  - Only one hyper parameter to tweak.

# Who's Important?

#### Centrality measures

- assign scores to each node based on certain criteria
- degree, betweenness, closeness,
   PageRank, eigenvector, etc.





#### **Community 4:**

- Number of Trump followers: 1742 (~21%)
- Their top 8 friends:
  - 1. Adam Schefter 5. Marco Rubio
  - 2. Dr. Ben Carson 6. Ted Cruz
  - 3. Sean Hannity 7. Ann Coulter
  - 4. Megyn Kelly 8. Bill O'Reilly

#### Community 6:

- Number of Trump followers: 588 (~7%)
- Their top 8 friends:
  - 1. Lord Sugar
  - 2. Wayne Rooney
  - 3. Cristiano Ronaldo
  - 4. Piers Morgan

- 5. Jonathan Ross
- 6. Gary Lineker
- 7. Jeremy Clarkson
- 8. Rio Ferdinand

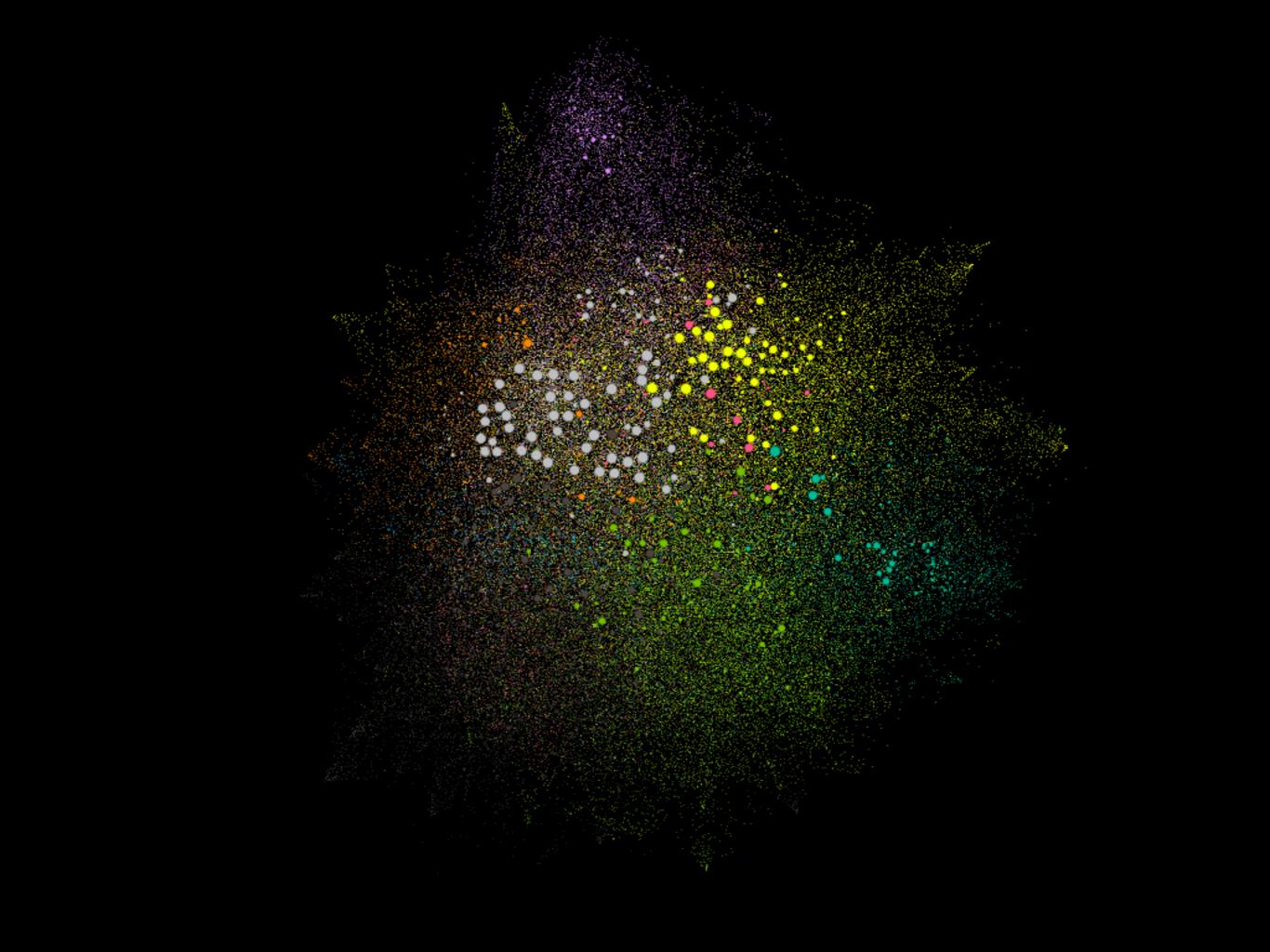
#### Community 7:

- Number of Trump followers: 412 (~5%)
- Their top 8 friends:
  - 1. Lil Wayne WEEZY 5. Trey Songz
  - 2. Sean Diddy Combs 6. Alicia Keys
  - 3. Chris Brown 7. J. Cole
  - 4. T.I. 8. Ludacris

5. John Cena

#### **Community 12:**

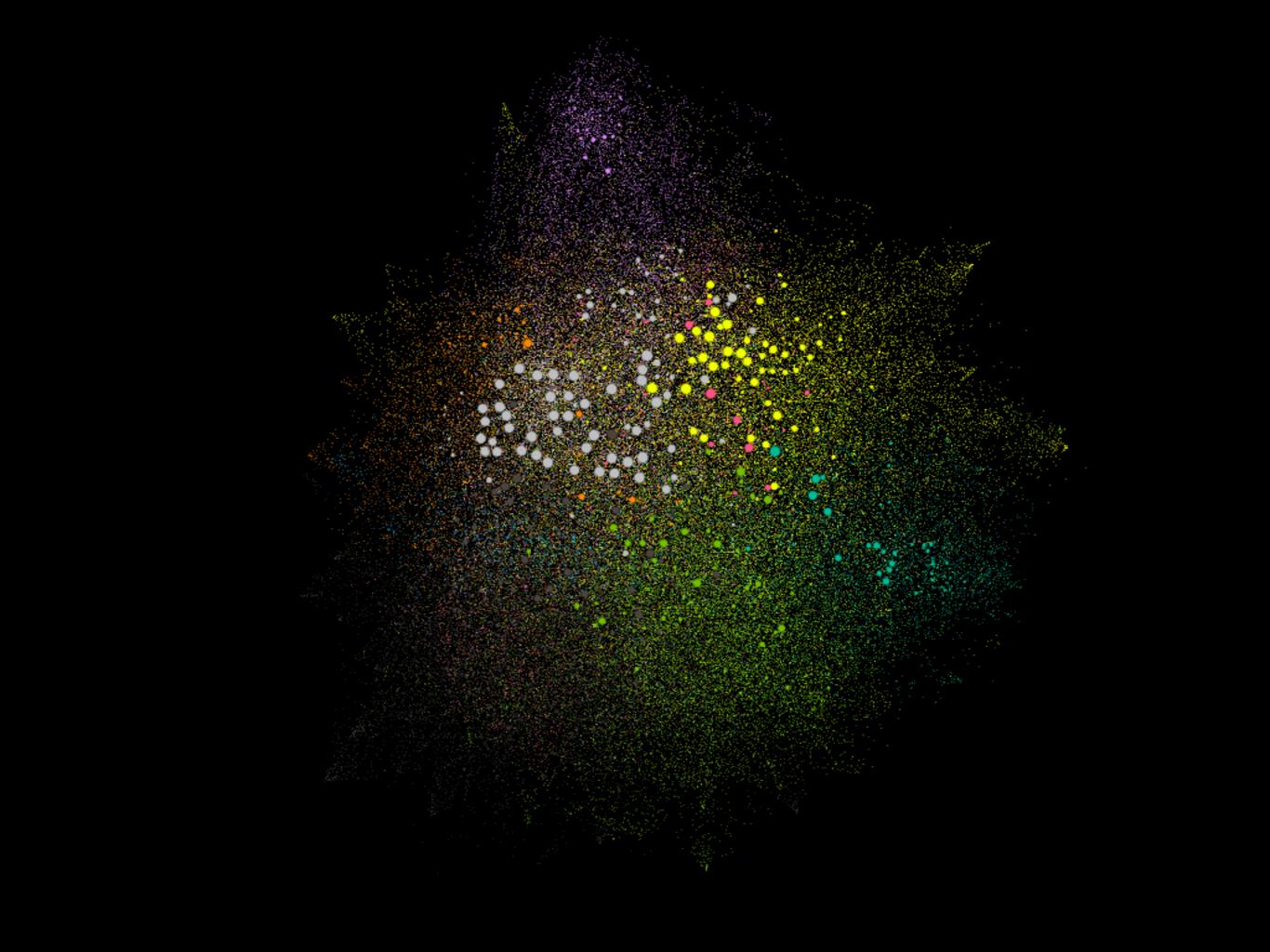
- Number of Trump followers: 368 (~5%)
- Their top 8 friends:
  - 1. PlayStation
  - 2. Xbox 6. Steam
  - 3. Dwayne Johnson 7. WWE
  - 4. Rockstar Games 8. Triple H

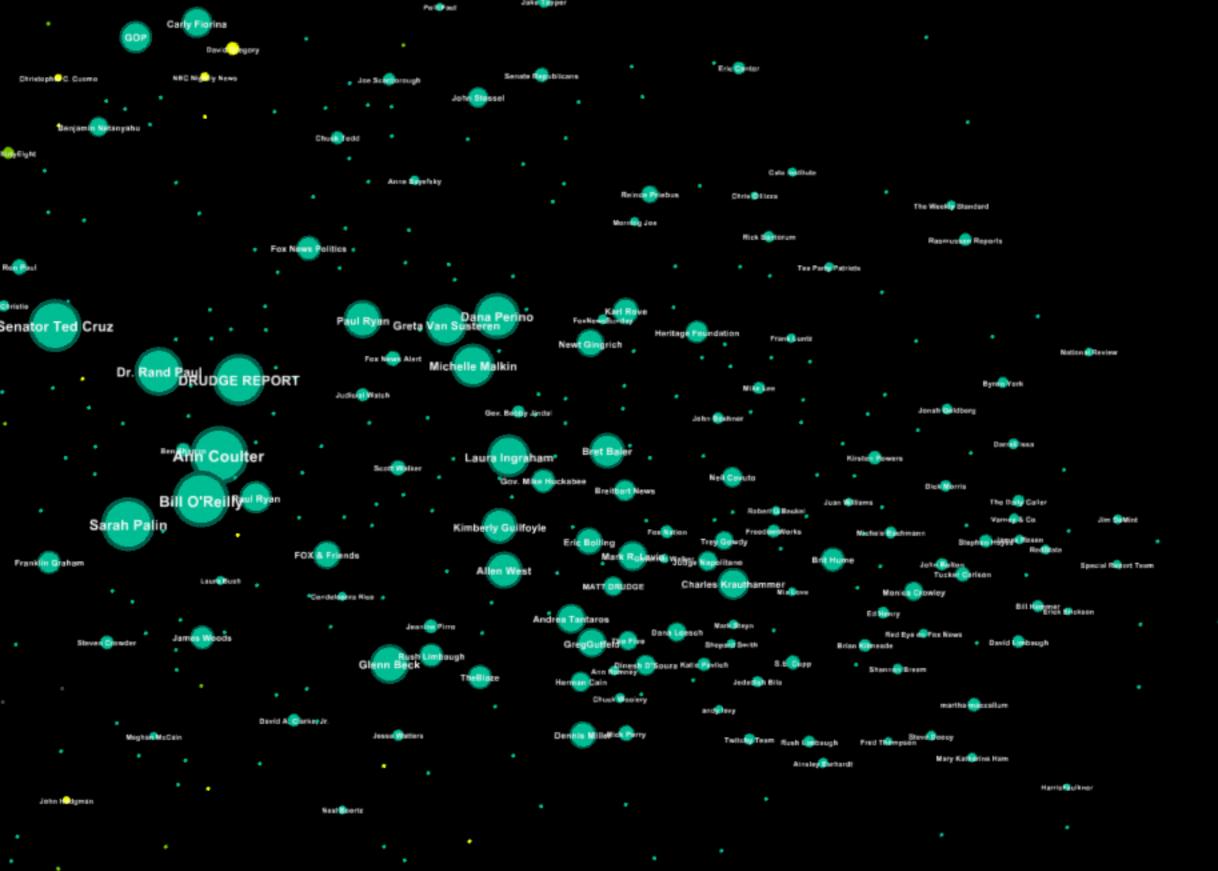


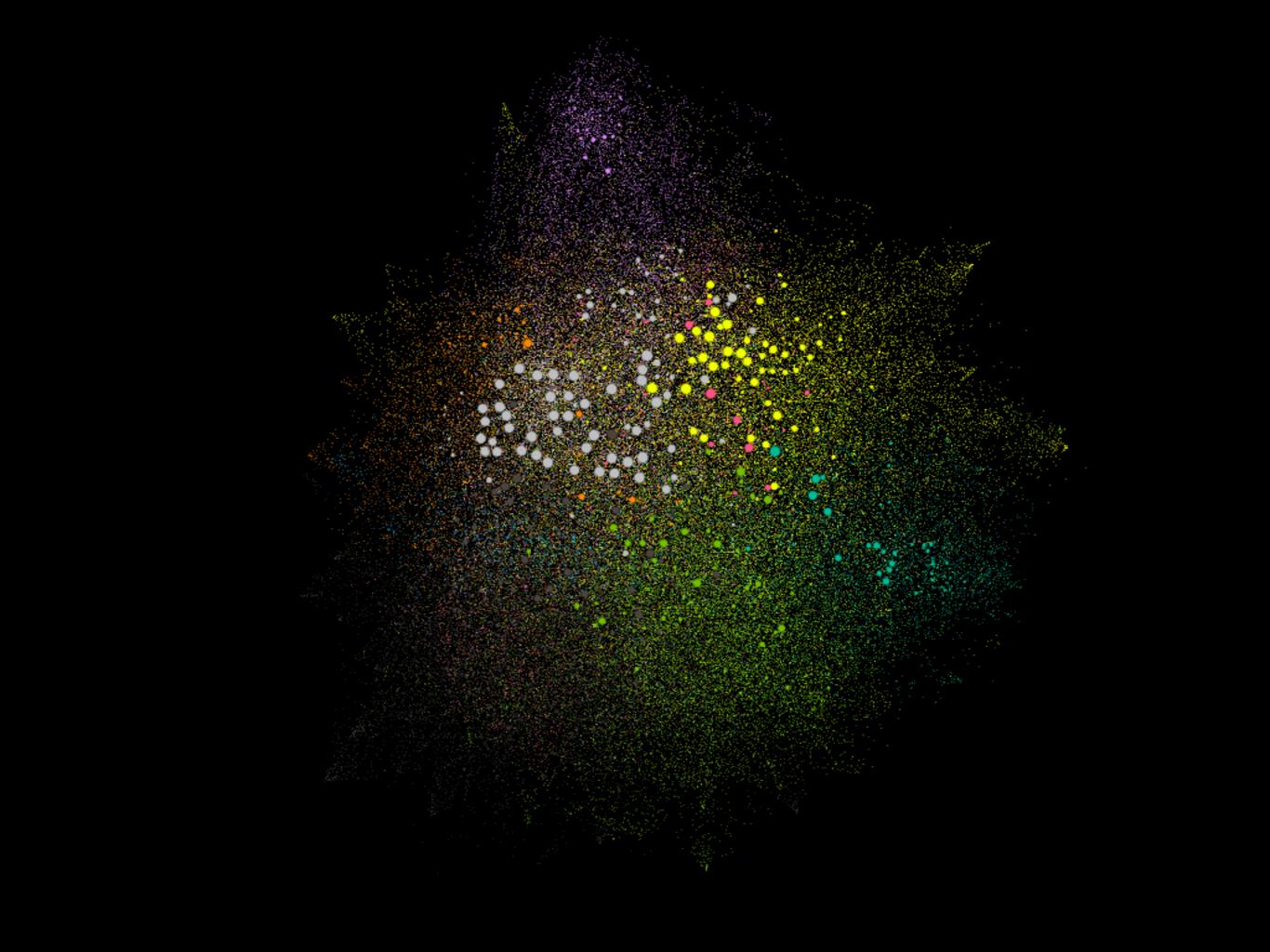
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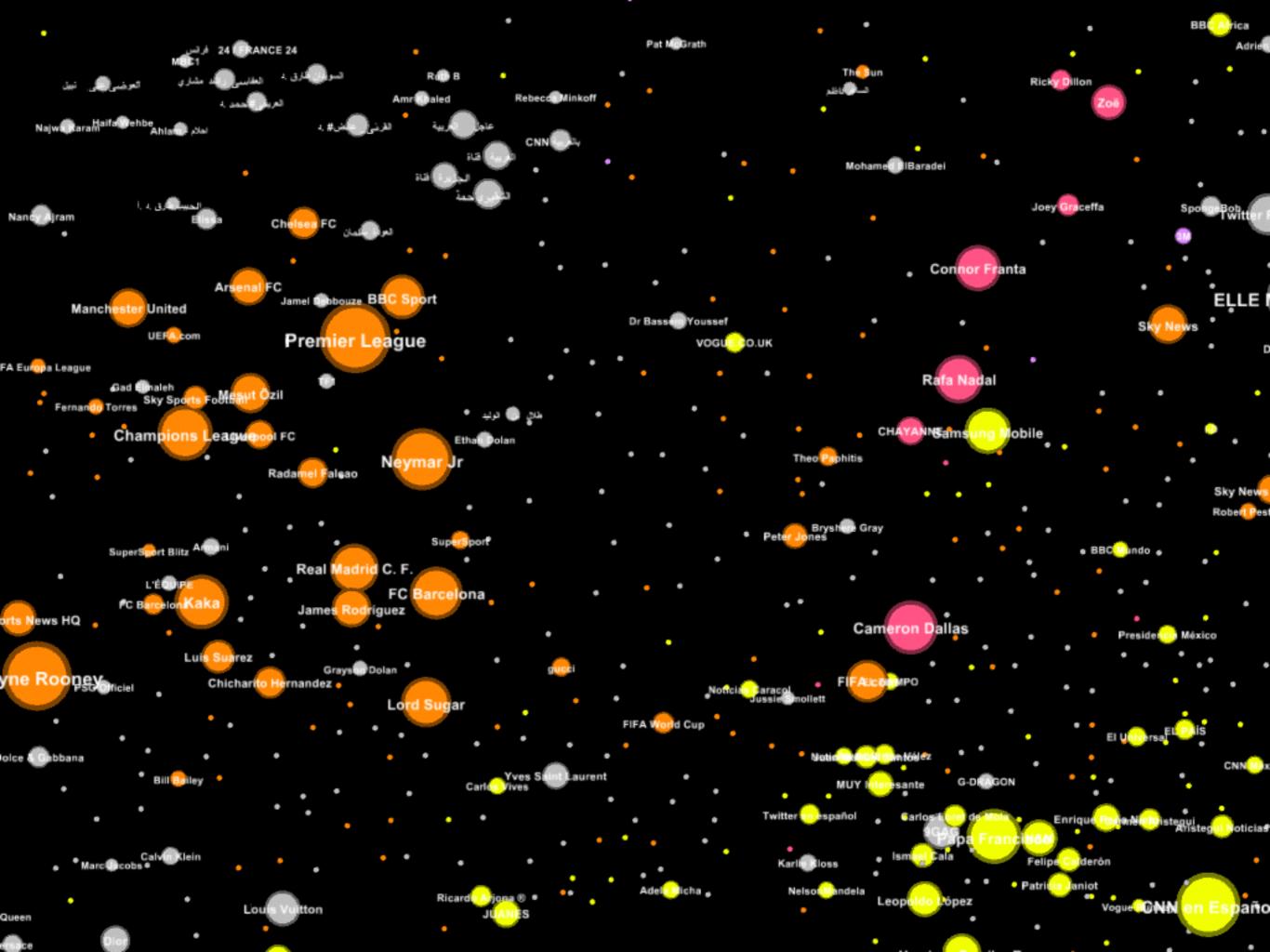
Econo@:Times

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Jasmeer Anazoor
Reha Khan
fatima hutto
Naja Sethi Kamra Khan
Asma Malik
Wasee Badami
Wasee Badami
Shehbasi Shehbasi
Shekh Rajid Ahmad
Shekh Rajid Ahmad
Maryam Maraz Sharif
Maryam Maraz Sharif
Mubasha Lucman
Hamal Mir









 The code to re-produce this is available on: https://github.com/motasay/trump-followers

The dataset is available on: <a href="http://bit.ly/">http://bit.ly/</a>
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