

# Improving the current state-of-art for the online communities and misinformation detection systems.



## BACKGROUND:

The proposed research is based on the theory that **misinformation has different propagation paths** than information, and that the **role of communities** within online platforms play a significant role.

## RESEARCH OBJECTIVES:

1. To **improve machine learning based community detection** models on the task of online misinformation detection.
2. To develop a **community-based misinformation propagation model**.
3. To produce a **comprehensive study at scale** including different modalities

## METHODS:

- **RO1:** Data Collection, Modelling (i.e. using BERT transformer) and Community Detection using GNN
- **RO2:** NLP methods for text and Spatial GNN for the social network structure

## RESPONSIBLE INNOVATION:

- Public Engagements
- Future Thinking

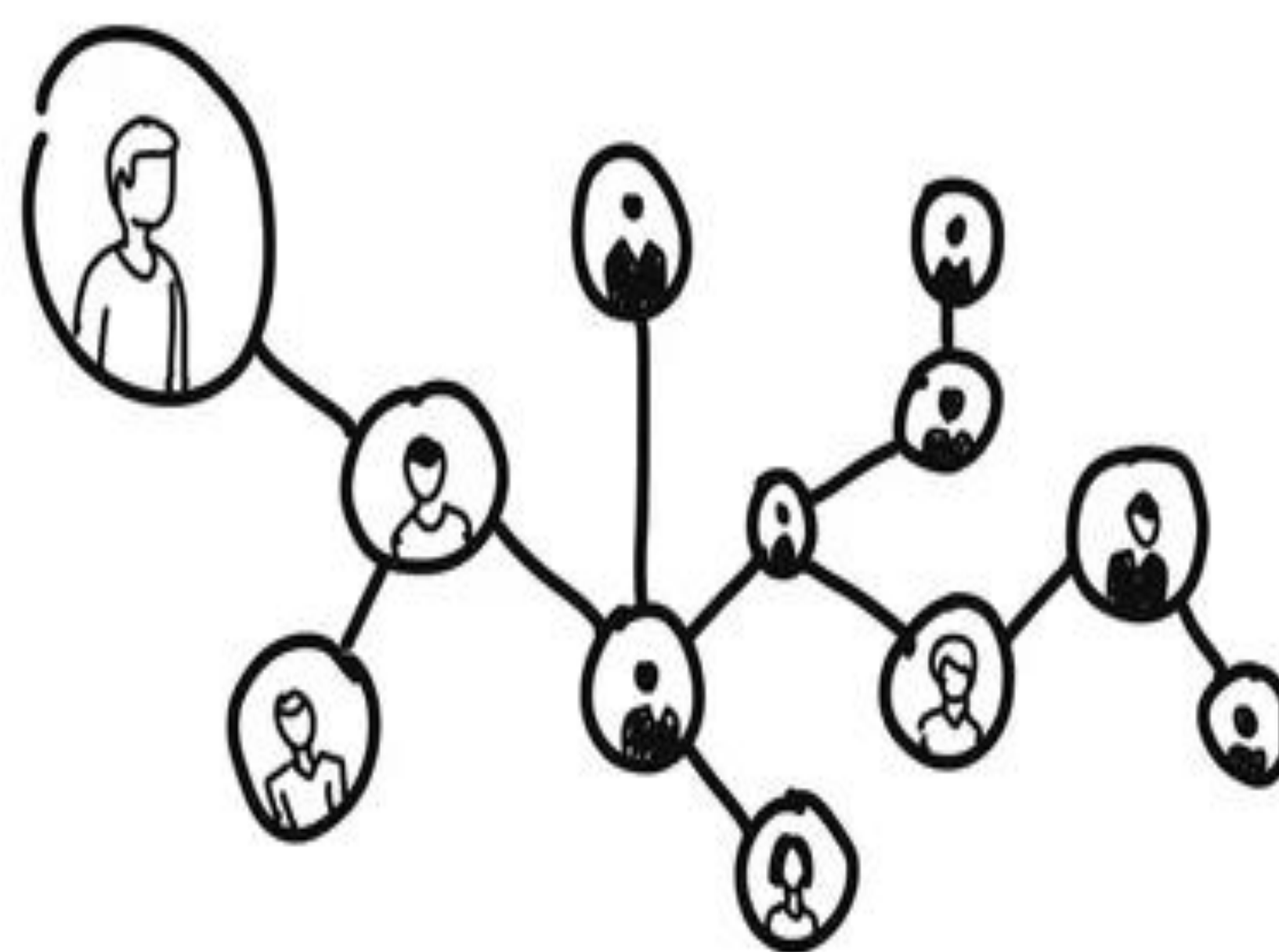
## What is fake news?

- Fake News can be described as **untrue or exaggerated stories**, often spread through social media
- **False stories can be retweeted by thousands of people before counter-evidence** (i.e. truthful information) starts to emerge. Since fake news is often more exciting than the facts, research shows it spreads far quicker.

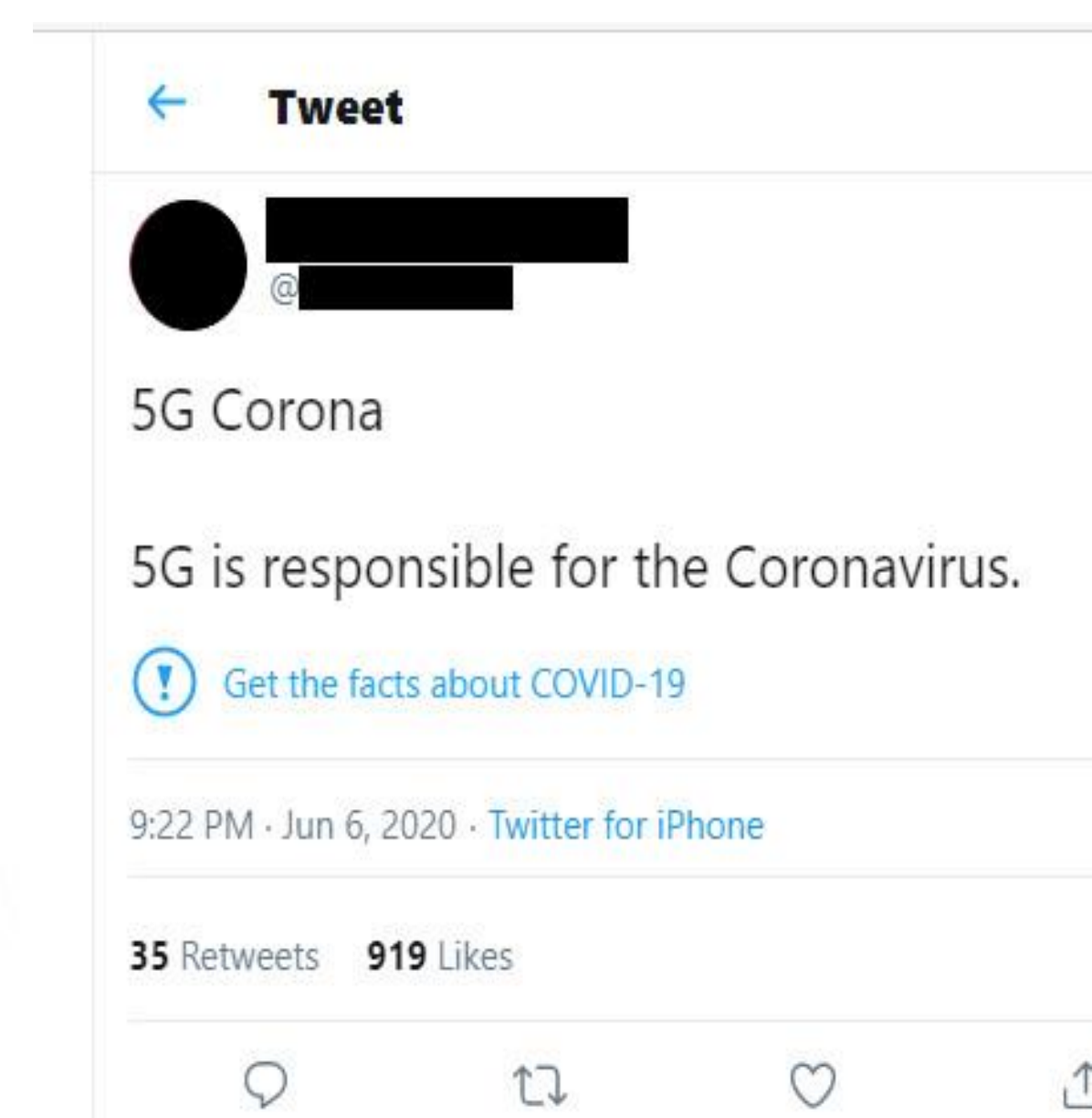
## Different modalities:



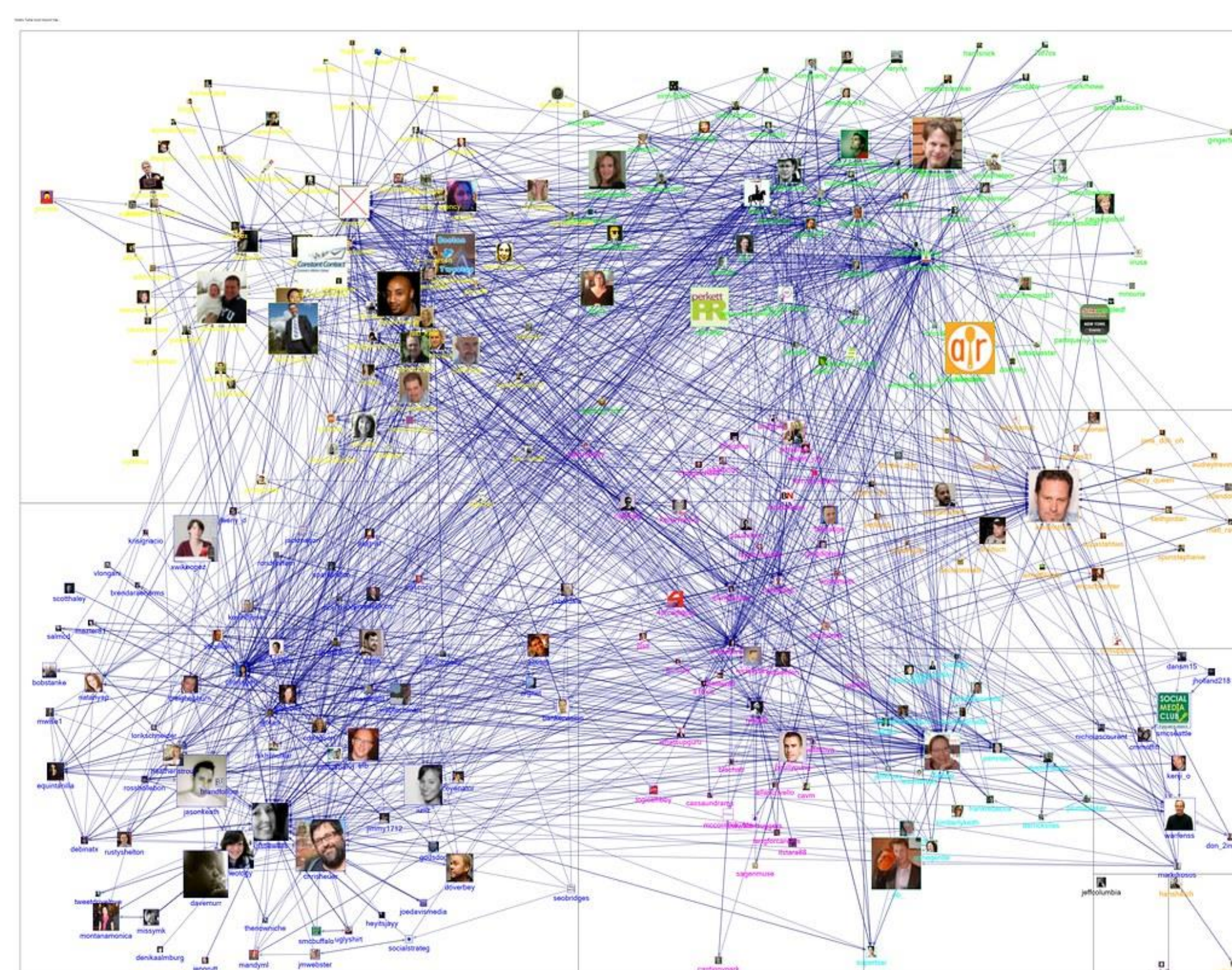
1. Visual



2. Social



3. Textual



## A geometric deep learning approach

The proposed method will allow **integrating heterogeneous data** pertaining to the user profile and activity, social network structure, news spreading patterns and content in order to **detect fake news on social network**.

“*Online misinformation can cause significant harm to an individual*”



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