

# Discussion

## Research Questions

- Aim to answer the following research questions (RQ) to better understand FANG's performance under different scenarios:
  - RQ1: Does FANG work well with limited training data?
  - RQ2: Does FANG differentiate between fake and real news based on their contrastive engagement temporality?
  - **RQ3: How effective is FANG's representation learning?**

# Discussion

## RQ3: Representation Learning – Intrinsic Evaluation

- Verify **how generalizable** the minimally supervised **news representations** are for the fake news detection task.
- First optimize both GCN and FANG on 30% of the training data to obtain news representations.
- Then cluster these representations using an unsupervised clustering algorithm OPTICS, measure the **homogeneity score** – the extent to which clusters contain a single class.
- The higher the homogeneity score, the more likely the news articles of the same factuality label are to be close to each other, which yields the higher quality representation.