Introduction

Contributions

- First approach that investigates the role of the relationship (similarity) between news textual & visual information in predicting fake news.
- Proposed a new method to jointly exploit multi-modal (textual & visual) and relational information to learn the representation of news articles and predict fake news.

Methodology

Problem Definition and Key Notation

- Given a news article $A = \{T, V\}$ ($T =$ text information, $V =$ visual information)
- Denote $t, v \in \mathbb{R}^d$ as corresponding representations, $t = M_t(T, \theta_t), v = M_v(V, \theta_v)$
- Let $s = M_s(t, v)$ denote the similarity between t and v, where $s \in [0,1]$
- Goal: $M_p : (M_t, M_v, M_s) \overset{(\theta_t, \theta_v, \theta_p)}{\longrightarrow} \hat{y} \in [0,1]$, where θ_* are parameters to be learned
  - Determine whether A is fake news $(\hat{y} = 1)$ or true one $(\hat{y} = 0)$.
  - By investigating its textual, visual information, and their relationship.