

# FakeNewsTracker: A Tool for Fake News Collection, Detection, and Visualization

Kai Shu, Deepak Mahudeswaran, Huan Liu

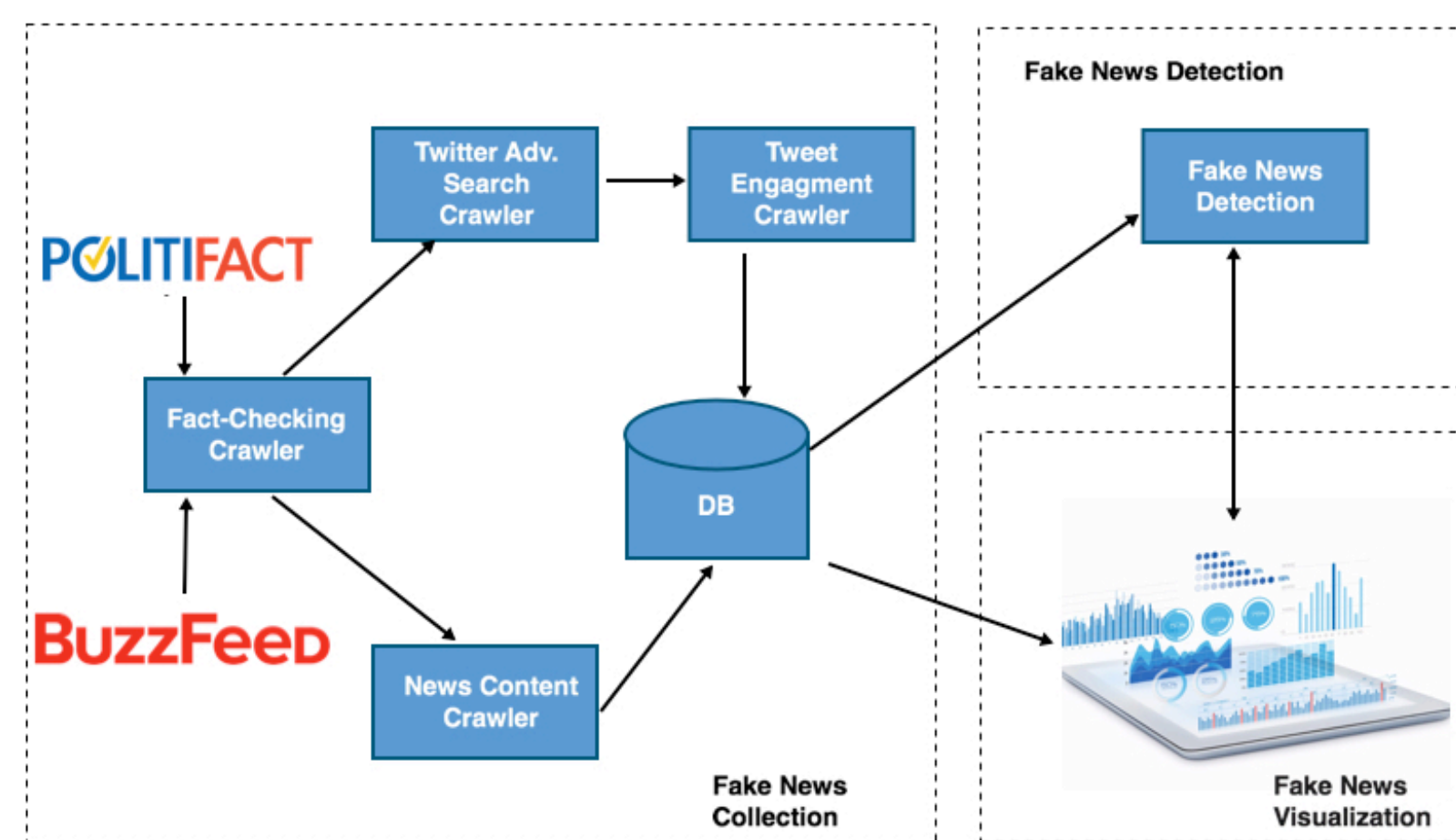
Arizona State University

{kai.shu, dmahudes, huan.liu}@asu.edu

## Introduction

- Fake News Detection is an important problem because of its social impacts.
- It is challenging because of
  - Lack of adequate labeled data
  - Changing topics of fake news in social media

## Proposed Framework

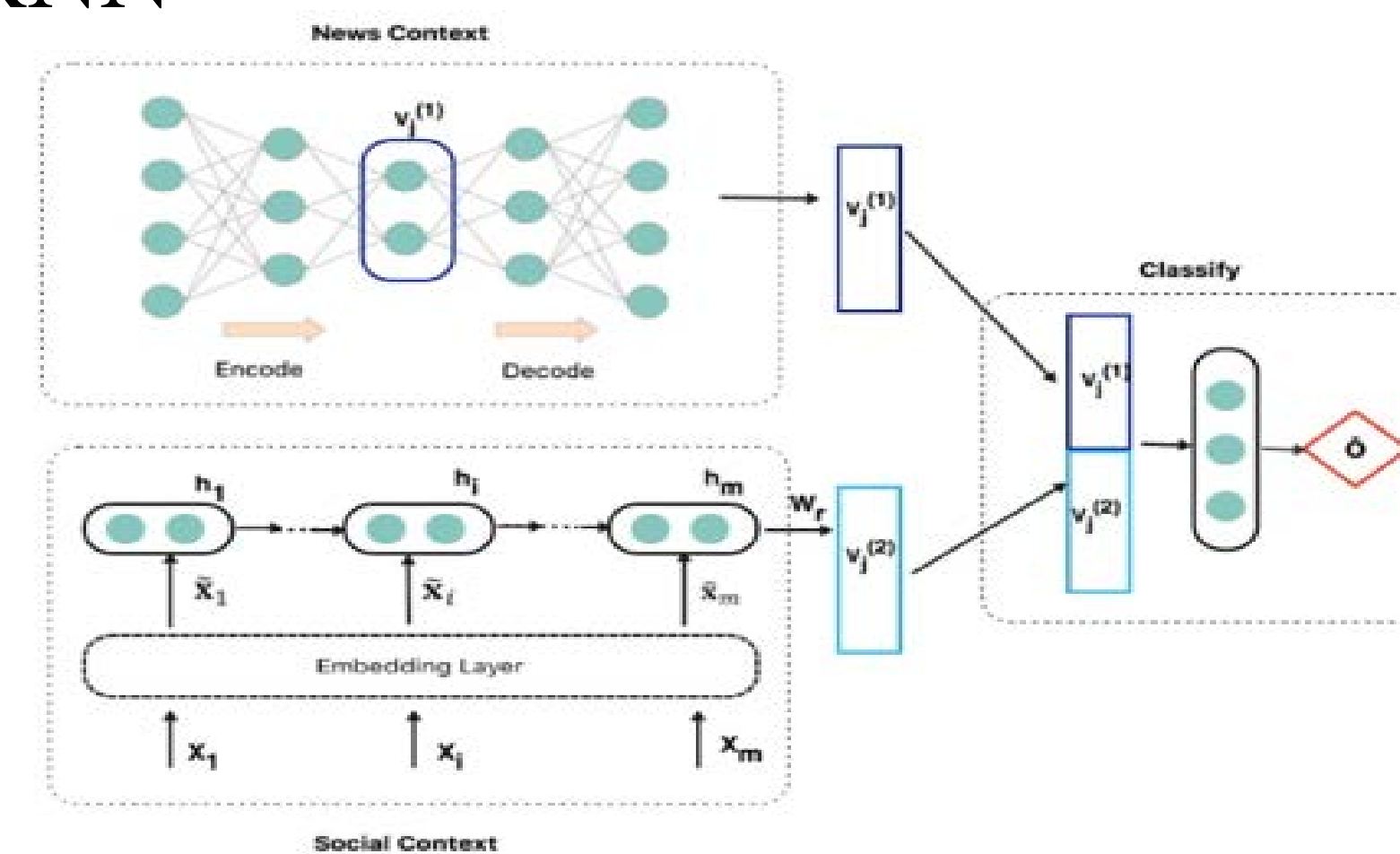


## Contributions:

- An end-to-end framework for the fake news collection, detection and visualization
- An ability to collect fake news pieces in streaming manner
- A detection mechanism using temporal social engagements and news content

## Fake News Detection - Social Article Fusion

- Detect using news context and social context
  - Learn News representation using Autoencoder
  - Learn Social temporal engagements using RNN

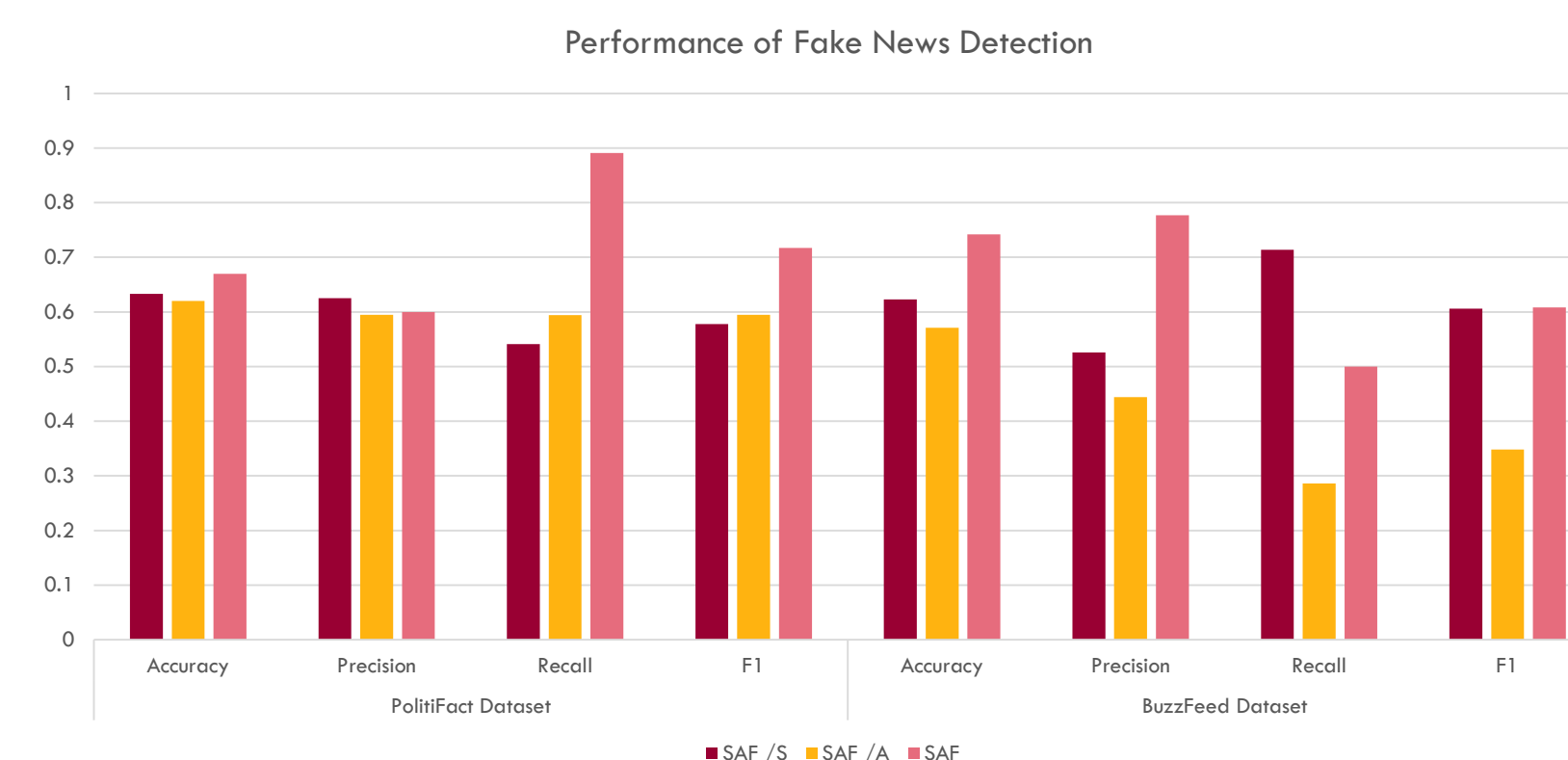


- Jointly optimize the output of both networks

$$Loss = \mathcal{L}_{pred} + \mathcal{L}_{AE} + \sum_{i=1}^n V_i^2$$

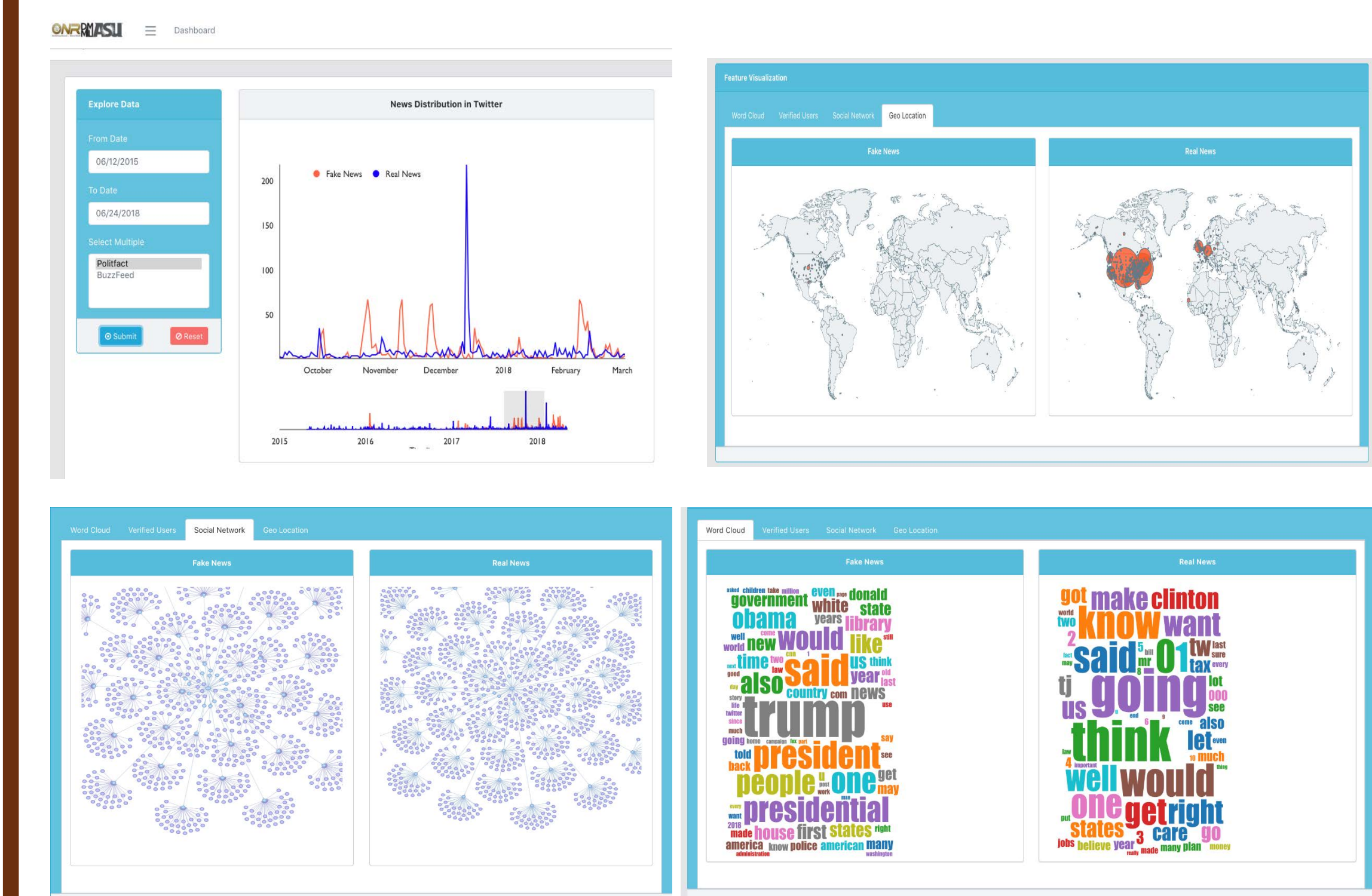
## Experimental Results

Proposed model performs better when both news content and social engagements are used.



## Visualization

- Web interface for tweet and feature visualization
  - Data Exploration including trends, geo location, social network and topics
  - Visualizations to compare the feature significance and model performance



## Future Work

- Extend FakeNewsTracker to establish a Fake-News Repository
- Extend FakeNewsTracker to collect data from different sources or platforms

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