Real News Recommendation System

July 28, 2019

Prajwol Lamichhane
Anukul Parajuli
Abhay Raut Chettri
Subarna Subedi

What / Why “RNRS”?

What : A **platform** that **recommends news** articles from different sources or news portals to give a **concise** and **relevant** news to the users.

Why: To **automate recommendation** of news in the news portals and avoid **fake news** and its **spread**

Objectives

- **Major:**
- To make the task of recommendation and fake news detection automatic
- To serve the people whose native language is Nepali
- To bridge the technological gap between our mother tongue and AI
- **Minor:**
- To understand machine learning algorithms for classification and supervised regression problem

Tools Used

Front-End Programming Tools:

- HTML, CSS, Jinja

Back-End Programming Tools:

- Django 2.1.1
- Jupyter Notebook
- SQlite3
- Python 3

Related Works

New York Times News Recommendation Engine

The **New York Times** publishes over 300 articles, blog posts and interactive stories a day. Their website can help the readers find information **relevant** to them, such as **the right news at the right time**, **personalized** content supplements to major events and stories in their preferred multimedia format. This website uses **content based filtering** and **collaborative filtering** for recommending news articles to their users.

Related Work

Fakenewsai.com

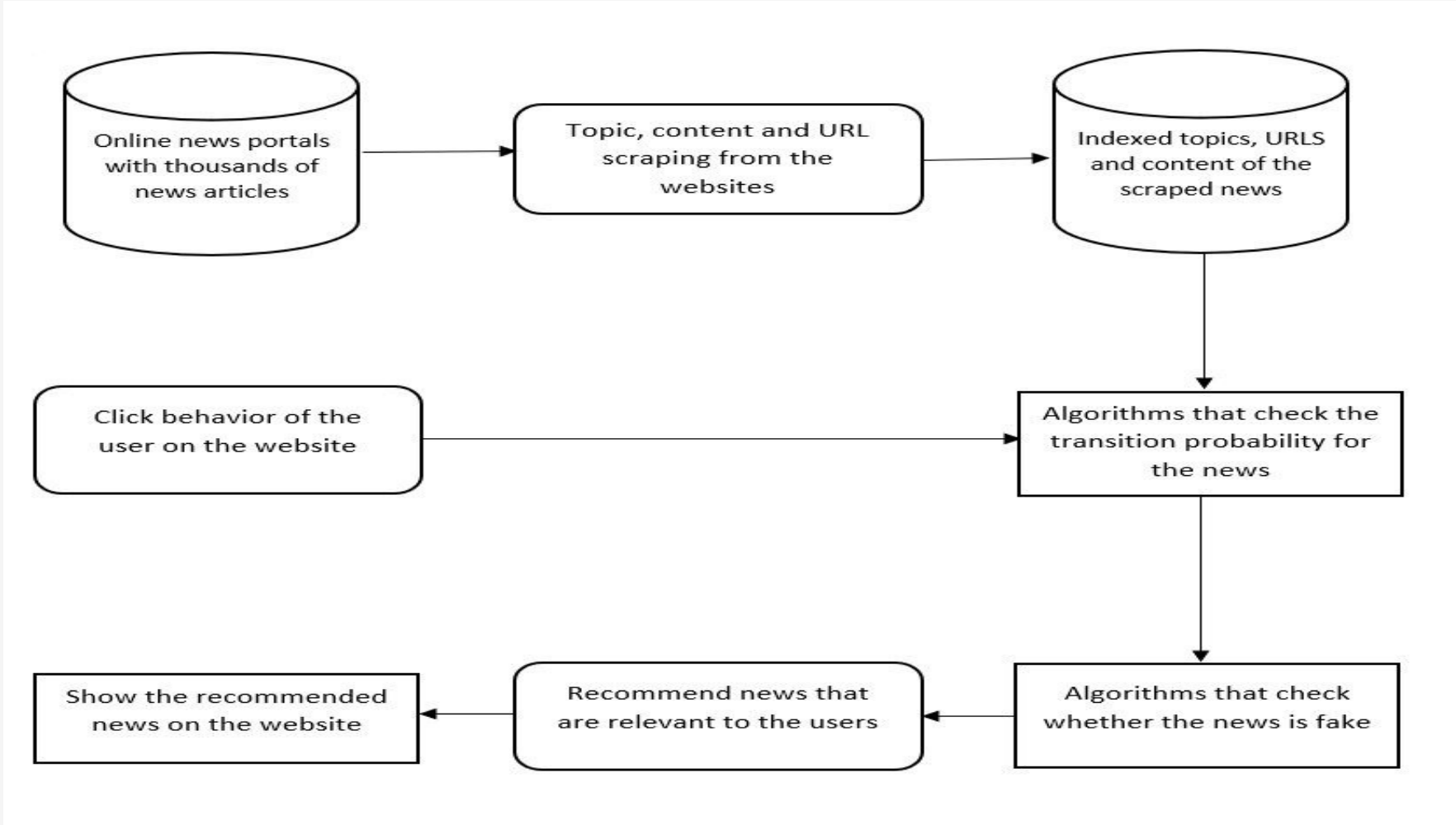
This website is an **AI powered website** that detects fake news using neural networks. They **analyze** websites to see if they are similar to **known fake news sites** using a neural network. The website provides a **text field** to input the URL of the news that users suspect is a fake news. Upon processing it shows whether the news article on the provided page is fake or not.

Related Work

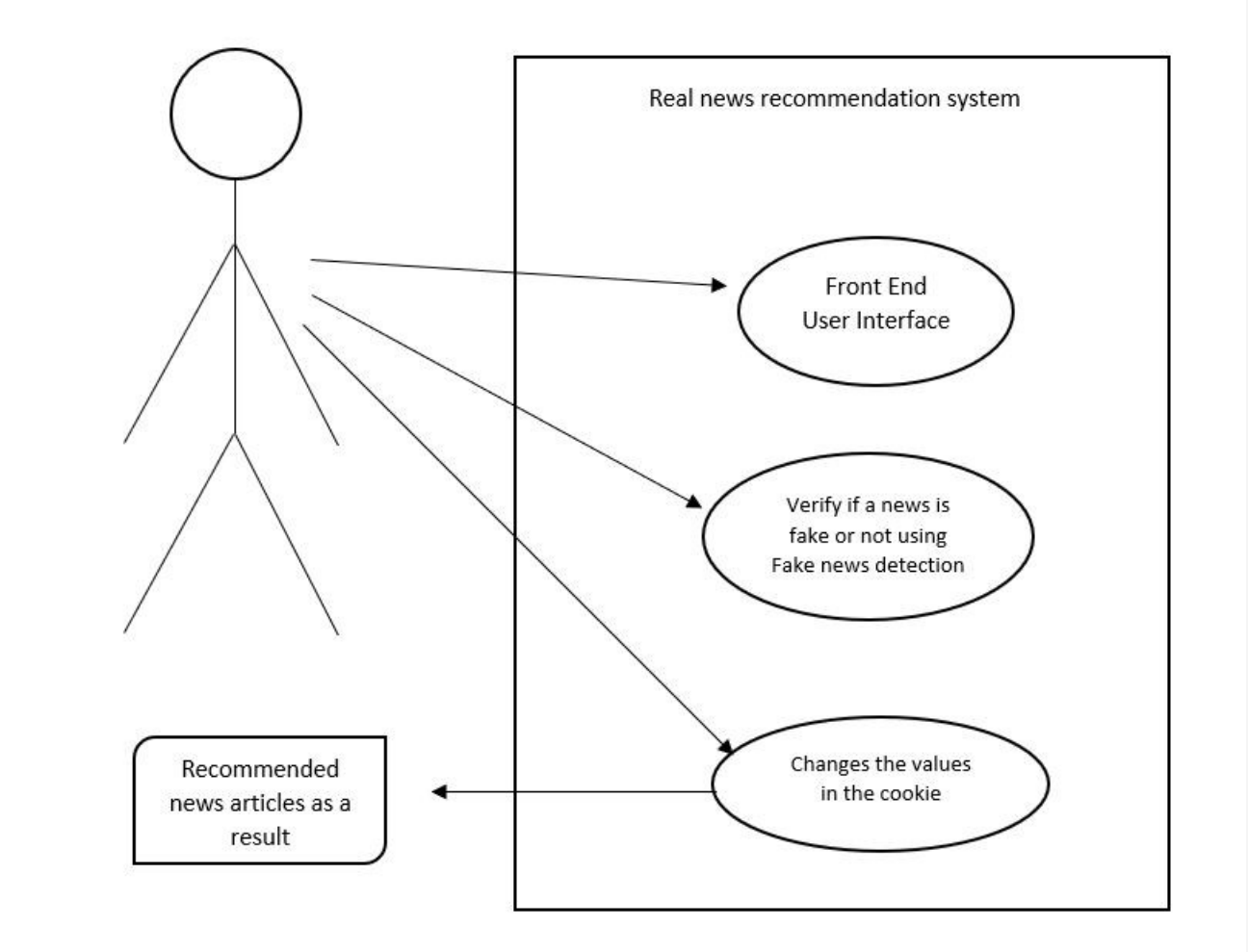
Others:

- Naive Bayes Algorithm
- Logistic Regression Algorithm
- Random Forest Algorithm

Design and Implementation



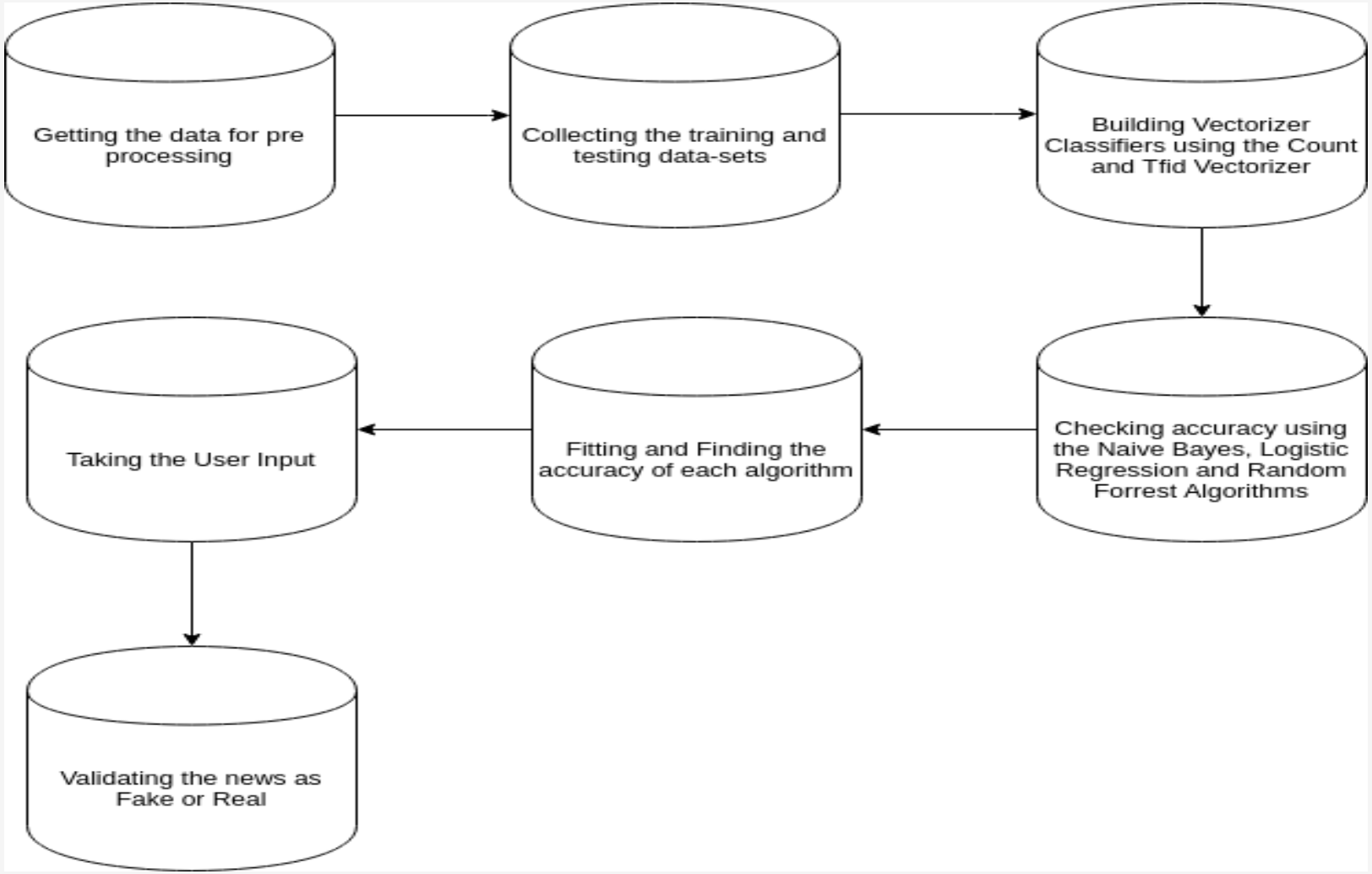
Design and Implementation/ Use Case



Recommendation Algorithm

Transition Probability = (Count of transition from news A to B) / Sum of count of transitions from A to other news

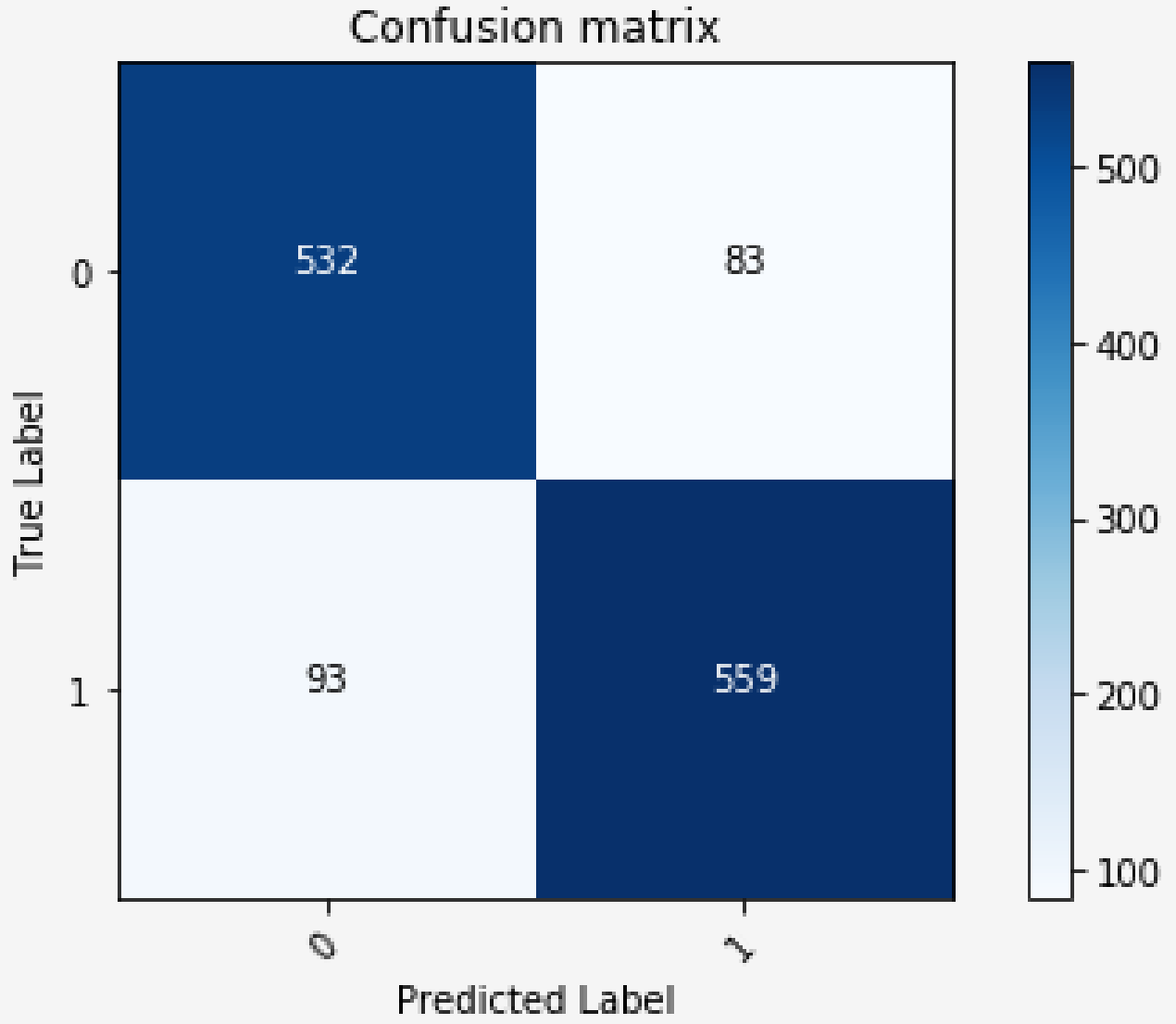
Design and Implementation of Fake News



Results Obtained

Using Naive Bayes Algorithm:

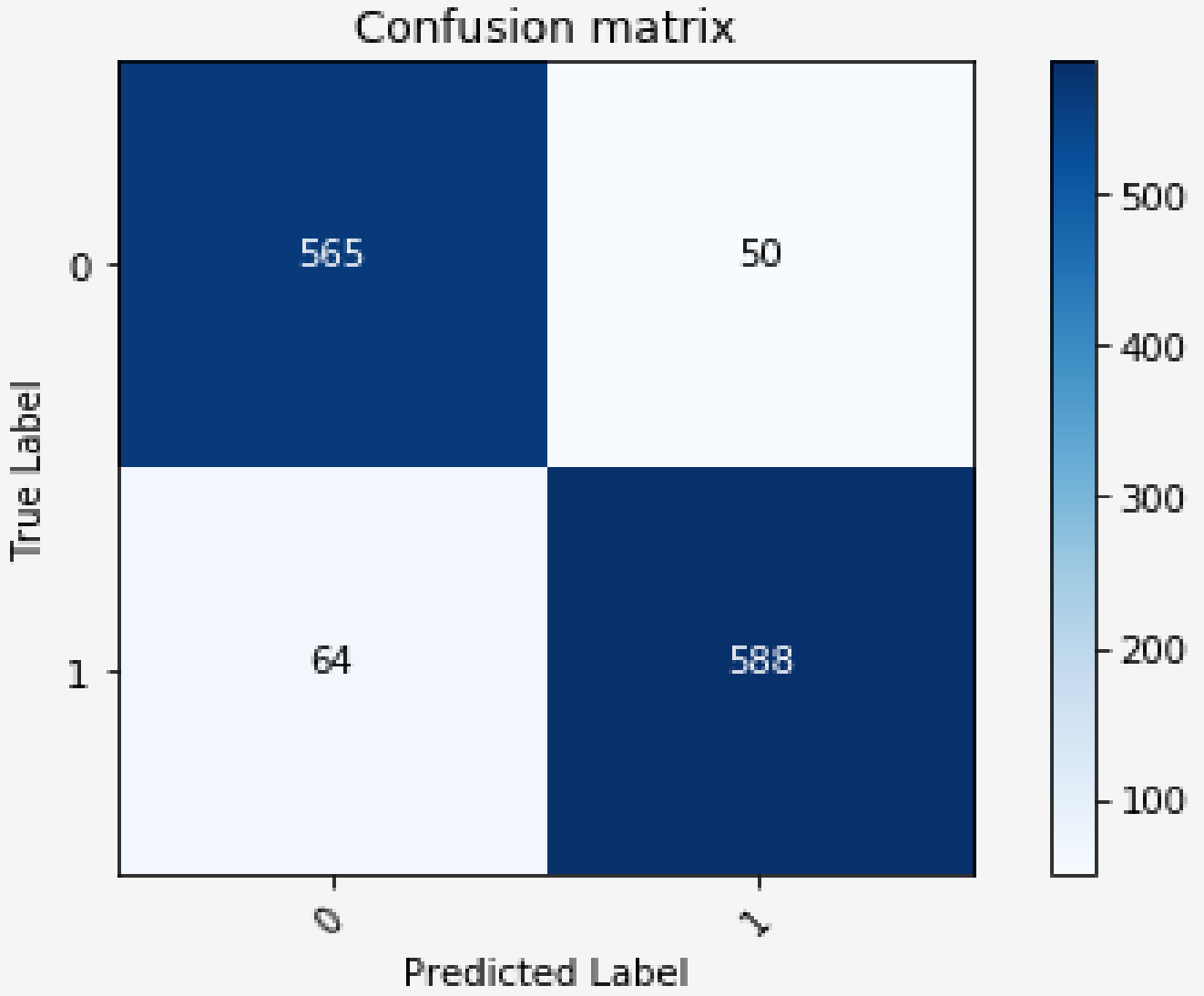
Accuracy Obtained = 89.2%



Results Obtained

Using Logistic Regression Algorithm:

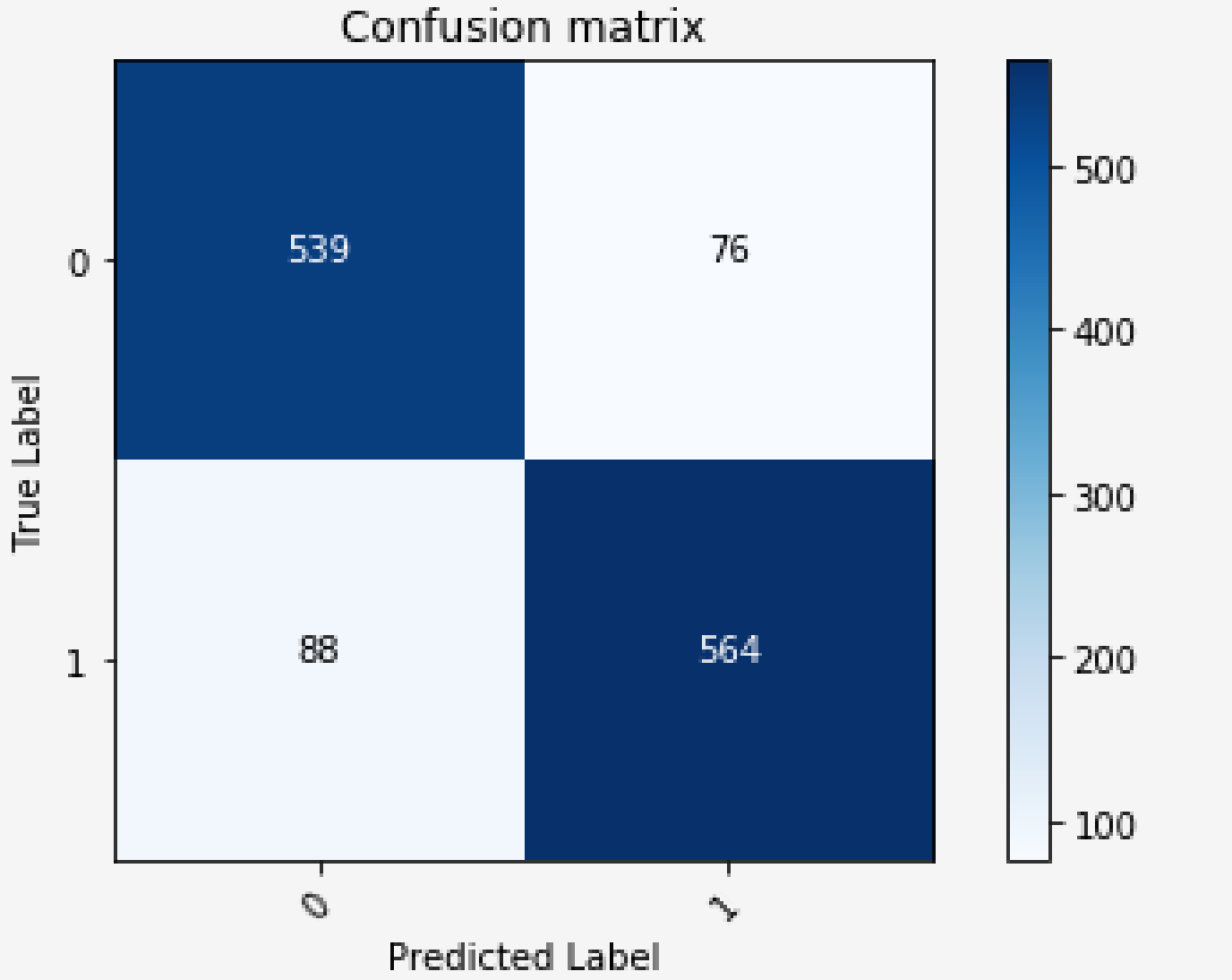
Accuracy Obtained =91.002%



Results Obtained

Using Random Forest Algorithm:

Accuracy Obtained =87.05%



Features

- Real News Recommendation
- Fake News Detector

Take Way

- Easy to use
- Free
- Web Application
- Individual friendly
- Multifunctional

Software

1. **Jupyter Notebook**
2. **Sublime Text**
3. **Atom**

Limitations

1. Not able to calculate the accuracy of the recommendation system.
2. Fake News Detection does not work for Nepali News

Future Enhancement

- Making Nepali fake news to feed the algorithm such that it can also validate fake news
- Improving the recommendation system using personalized data of users.

Conclusion

In conclusion, the recommendation algorithms are a little basic. It can be improved upon by using Machine Learning algorithms for collaborative filtering of users data.

The accuracy of the fake news detection algorithm is also only 91 % which is good but can be better. This has been a good team work which has motivated us to increase the accuracy of the detector by increasing the number of data set in coming days and also make it available for Nepali language.

Thank You