

**A**  
**Project Report**  
**On**  
**"Fake News Detection"**

(CE351 – Software Group Project)

**Prepared by**  
Rutvik Patel(D18CE145)  
Jhanvi Dave(D18CE147)  
Yash Somaiya(D18CE150)  
NishitModha(D18Ce153)

**Under the Supervision of**  
Dr. Chintan Bhatt

**Submitted to**

Charotar University of Science & Technology (CHARUSAT)  
for the Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Technology (B.Tech.)  
in Computer Engineering (CE)  
for 5<sup>th</sup> semester B.Tech.

**Submitted at**



**U & P U. PATEL DEPARTMENT OF COMPUTER ENGINEERING**  
**(NBA Accredited)**  
**Chandubhai S. Patel Institute of Technology (CSPIT)**  
**Faculty of Technology & Engineering (FTE), CHARUSAT**  
**At: Changar, Dist: Anand, Pin: 388421.**  
**April, 2020**

## **DECLARATION BY THE CANDIDATES**

We hereby declare that the project report entitled “**Fake News Detection**” submitted by us to Chandubhai S. Patel Institute of Technology, Changra in partial fulfilment of the requirement for the award of the degree of **B.Tech** in Computer Engineering, from U & P U. Patel Department of Computer Engineering, CSPIT/FTE, is a record of bonafide CE351 Software Group Project (project work) carried out by us under the guidance of **Dr. Chintan Bhatt and Prof. Dhruti Pandya**. We further declare that the work carried out and documented in this project report has not been submitted anywhere else either in part or in full and it is the original work, for the award of any other degree or diploma in this institute or any other institute or university.

Rutvik Patel(D18CE145)

Jhanvi Dave(D18CE147)

Yash Somaiya(D18CE150)

Nishit Modha(D18CE153)

**Dr. Chintan Bhatt**  
**Assistant Professor**  
**U & P U. Patel Department of Computer Engineering,**  
**CSPIT/FTE, CHARUSAT-Changa.**



**CHARUSAT**  
CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

**Accredited with Grade A by NAAC**  
**Accredited with Grade A by KCG**

## **CERTIFICATE**

This is to certify that the report entitled "**Fake News Detection**" is a bonafied work carried out by **Rutvik Patel (D18CE145)** under the guidance and supervision of **Dr. Chintan Bhatt and Prof. Dhruti Pandya** for the subject **Software Project Major (CE351)** of 6<sup>th</sup> Semester of Bachelor of Technology in **Computer Engineering** at Chandubhai S. Patel Institute of Technology (CSPIT), Faculty of Technology & Engineering (FTE) – CHARUSAT, Gujarat.

To the best of my knowledge and belief, this work embodies the work of candidate himself, has duly been completed, and fulfills the requirement of the ordinance relating to the B.Tech. Degree of the University and is up to the standard in respect of content, presentation and language for being referred by the examiner(s).

Under the supervision of,

Dr. Chintan Bhatt  
Assistant Professor  
U & P U. Patel Dept. of Computer Engineering.  
CSPIT/FTE, CHARUSAT, Changa, Gujarat

Dr. Ritesh Patel  
Head - U & P U. Patel Department of Computer Engineering,  
CHARUSAT, Changa, Gujarat.

---

**Chandubhai S. Patel Institute of Technology (CSPIT)**  
**Faculty of Technology & Engineering (FTE), CHARUSAT**

At: Changa, Ta. Petlad, Dist. Anand, Pin:388421. Gujarat.



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**Accredited with Grade A by KCG**

## CERTIFICATE

This is to certify that the report entitled "**Fake News Detection**" is a bonafied work carried out by **Jhanvi Dave (D18CE147)** under the guidance and supervision of **Dr. Chintan Bhatt and Prof. Dhruti Pandya** for the subject **Software Project Major (CE351)** of 6<sup>th</sup> Semester of Bachelor of Technology in **Computer Engineering** at Chandubhai S. Patel Institute of Technology (CSPIT), Faculty of Technology & Engineering (FTE) – CHARUSAT, Gujarat.

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Under the supervision of,

Dr. Chintan Bhatt  
Assistant Professor  
U & P U. Patel Dept. of Computer Engineering.  
CSPIT/FTE, CHARUSAT, Changa, Gujarat

Dr. Ritesh Patel  
Head - U & P U. Patel Department of Computer Engineering,  
CHARUSAT, Changa, Gujarat.

---

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## CERTIFICATE

This is to certify that the report entitled "**Fake News Detection**" is a bonafied work carried out by **Yash Somaiya(D18CE150)** under the guidance and supervision of **Dr. Chintan Bhatt and Prof. Dhruti Pandya** for the subject **Software Project Major (CE351)** of 6<sup>th</sup> Semester of Bachelor of Technology in **Computer Engineering** at Chandubhai S. Patel Institute of Technology (CSPIT), Faculty of Technology & Engineering (FTE) – CHARUSAT, Gujarat.

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Under the supervision of,

Dr. Chintan Bhatt  
Assistant Professor  
U & P U. Patel Dept. of Computer Engineering.  
CSPIT/FTE, CHARUSAT, Changa, Gujarat

Dr. Ritesh Patel  
Head - U & P U. Patel Department of Computer Engineering,  
CHARUSAT, Changa, Gujarat.

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## CERTIFICATE

This is to certify that the report entitled "**Fake News Detection**" is a bonafied work carried out by **Nishit Modha (D18CE153)** under the guidance and supervision of **Dr. Chintan Bhatt and Prof. Dhruti Pandya** for the subject **Software Project Major (CE351)** of 6<sup>th</sup> Semester of Bachelor of Technology in **Computer Engineering** at Chandubhai S. Patel Institute of Technology (CSPIT), Faculty of Technology & Engineering (FTE) – CHARUSAT, Gujarat.

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Under the supervision of,

Dr. Chintan Bhatt  
Assistant Professor  
U & P U. Patel Dept. of Computer Engineering.  
CSPIT/FTE, CHARUSAT, Changa, Gujarat

Dr. Ritesh Patel  
Head - U & P U. Patel Department of Computer Engineering,  
CHARUSAT, Changa, Gujarat.

---

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## **ABSTRACT**

Fake news has been around since before the newspapers. Nowadays most of the people get their news from the internet. Internet is filled with all types of news, some credible while others are just there to fool the people into thinking that it is. There are a numerous ways to check whether a news article is authentic or not. Now, the users can be cautious while looking at any article by following some basic norms like looking at the address bar, spelling mistakes, source for an image used, the author's credibility etc. Even after doing all that there is no guarantee that the news is completely true. You can search for and read multiple articles but that's too much manual work. And that's where our project comes in the picture. Fake news Detection does exactly what it says, by giving the article that you want to verify or check as an input, the algorithm will search for all the similar articles and give a probability about whether the article is true or deceptive.

## **ACKNOWLEDGEMENT**

We would like to express our gratitude to our faculty/teachers for providing this golden opportunity to do this project on fake news detection, which in turn made us do a lot of research and we came to know about a lot of different things related to machine learning, datasets and documentation about the said project. I am also grateful to my peers for helping us whenever needed.

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# CHAPTER 1: INTRODUCTION

## 1.1 PROJECT SUMMARY

Fake news detection, as the name suggests verifies whether the news article is authentic or not. It takes a link of an article as an input and through machine learning gives you an estimate regarding the probability of the news article being fake or real. There are various machine learning models used to give you the most accurate output.

## 1.2 PURPOSE

With the ever growing popularity of social media, the news articles are becoming more and more fake just to make it entertaining for the mass. By using the created project people can verify whether the news article that they are reading is in fact authentic or just some paragraphs made up to increase the popularity of the news website.

## 1.3 OBJECTIVE

To verify whether a news article is authentic or not

## 1.4 SCOPE

Fake news detection will have the following features:

The User can enter the link for a news article that they want to verify. Then the algorithm will give an estimated probability of whether the news article is authentic or not.

## CHAPTER 2: PROJECT MANAGEMENT

### 2.1 PROJECT PLANNING

#### 2.1.1 Project Development Approach and Justification

The approach chosen to complete this project is by using Iterative Waterfall Model. The Iterative Waterfall Model provides all the necessary requirements of this project as it uses step by step process which increases the efficiency of the application. Iterative waterfall model is one of the simplest approaches to follow. It also provides a feedback path from one phase to its preceding phase which helps in correcting the errors that are committed and these changes are reflected in the later phases.

#### 2.1.2 Project Effort, Time and Cost Estimation

Considering the average hardware requirements for the development team, the average hardware resources necessary for our project are as follow:

- Processor – Intel i5
- RAM – 4 GB
- HDD – 500 MB
- Network Interface Card (NIC)
- 1 GB Graphics Card

Hence, a PC or laptop that fulfils the above-mentioned resources is required for the development team.

In addition to these HW requirements also the following SW requirements should be satisfied:

- Python 3.8
- MS Visio
- Web Browser

#### 2.1.3 Roles and Responsibilities

Table 2.1 Role and Responsibility

Member Name	Responsibility
Rutvik Patel	Buisness Analyst, Developer
Jhanvi Dave	Designer, Buisness Analyst
Yash Somaiya	Project Manager, Developer, Tester
Nishit Modha	Buisness Analyst, Developer

## CHAPTER 3: SYSTEM REQUIREMENTS STUDY

### 3.1 USER CHARACTERISTICS

The user who will be using this module would be a non-technical person. They would paste the link of the news article that they want to verify on the module and would get an estimated probability regarding it.

### 3.2 HARDWARE AND SOFTWARE REQUIREMENTS

#### 3.2.1 Hardware Requirements

- Processor – Intel i5
- RAM – 4 GB
- HDD – 500 MB
- Network Interface Card (NIC)
- 1 GB Graphics Card

#### 3.2.2 Software Requirements

- Python 3.8
- MS Visio
- Web Browser

### 3.3 ASSUMPTIONS AND DEPENDENCIES

#### 3.3.1 Assumptions

- The users have sufficient knowledge regarding how to copy/paste a link of the news article and other browsing capabilities.
- The user knows the English language, as the user interface will be provided in English.
- The user has stable internet connection.

#### 3.3.2 Dependencies

- Anyone can use the module to verify a news article's authenticity.
- The user can access the module from any browser, operating system or device.
- The link should be pasted properly.

## CHAPTER 4: SYSTEM ANALYSIS

### 4.1 STUDY OF CURRENT SYSTEM

Table 4.1 Current Systems

Application/Project Name	Technology	Features
Fake News Detection in Social Media	Web Based Applications	<ul style="list-style-type: none"> <li>Find fake news from social media and tell whether it is fake or not</li> <li>If the news are not fake, tells how accurate the news are</li> <li>If the news are fake remove it from timeline or account</li> </ul>
Fake news Detection in News articles and news websites	Web based Applications	<ul style="list-style-type: none"> <li>Check the article for any fake news by comparing it with trusted websites and article.</li> <li>Tells whether the news article is fake or not</li> </ul>

### 4.2 PROBLEM AND WEAKNESSES OF CURRENT SYSTEM

Table 4.2 Problems of current systems

Current System	Problem
Fake news Detection in Social Media.	<p>It does not provide accurate results all the time.</p> <p>Sometimes removing fake news from account or timeline is difficult.</p>
Fake news Detection in news articles and websites.	<p>Sometimes comparing articles with trusted resources are became tedious task.</p> <p>It also does not provide 100% accuracy all the time.</p>

## 4.3 REQUIREMENTS OF NEW SYSTEM

### 4.3.1 Functional Requirements

F1: Article Link

Input: News article's link

Output: Whether the news is fake or not.

### 4.3.2 Non Functional Requirements

F1: Reliability

Reliability defines how likely it is for the software to work without failure for a given period of time.

F2: Performance

Performance is a quality attribute that describes the responsiveness of the system to various user interactions with it.

F3: Scalability

Scalability requirements describe how the system must grow without negative influence on its performance.

F4: Availability

Availability is gauged by the period of time that the system's functionality and services are available for use with all operations.

# CHAPTER 5: SYSTEM DESIGN

## 5.1 INTERFACE

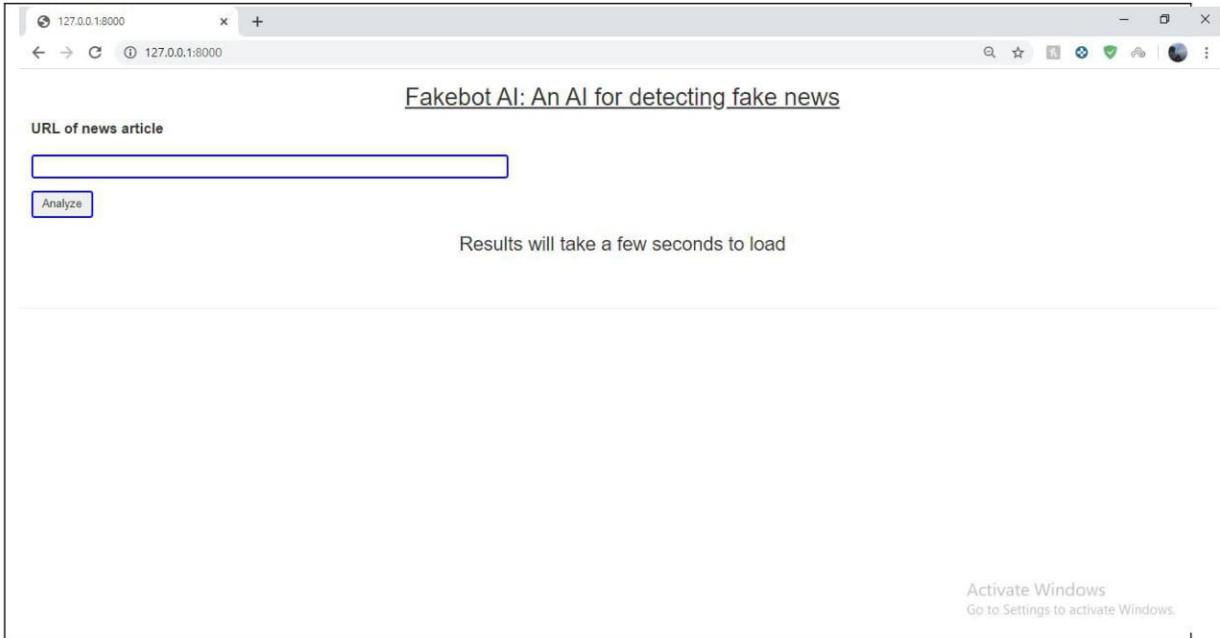


Fig 5.1 User input/ Main screen

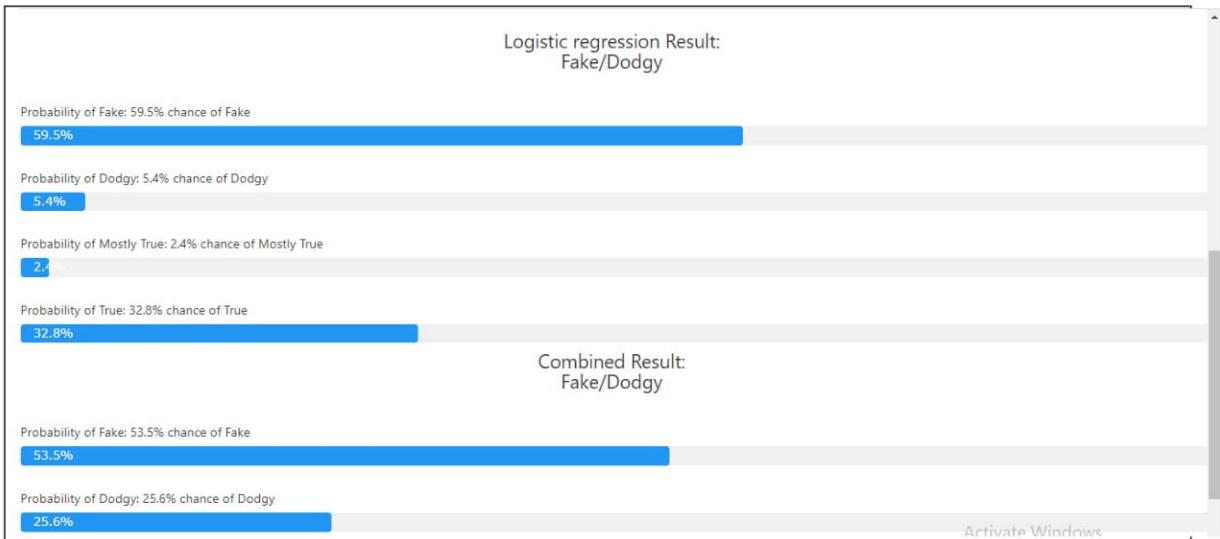


Fig 5.2 Output

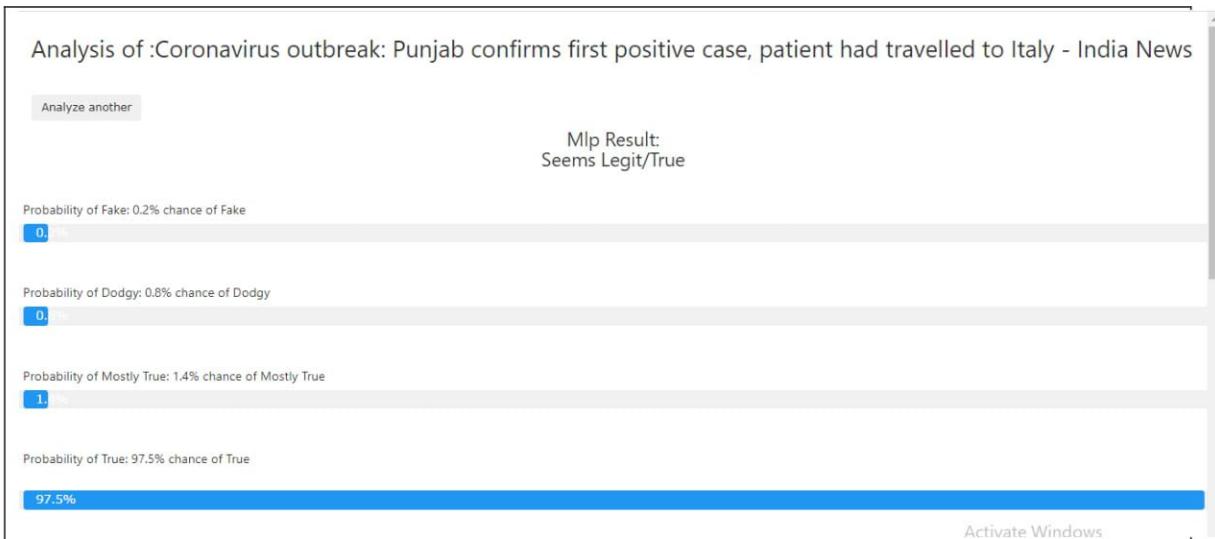


Fig 5.3 Output

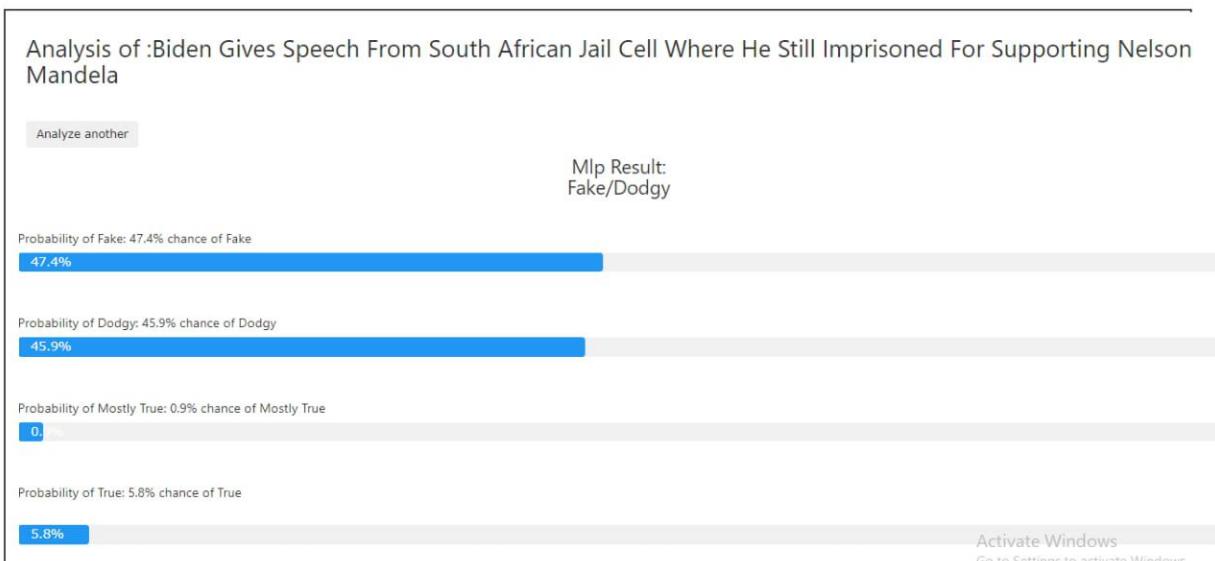


Fig 5.4 Output

## CHAPTER 6: CONCLUSION AND DISCUSSIONS

### 6.1 SELF ANALYSIS OF PROJECT VIABILITIES

The project can be very useful and has great impact on our society as each and every people can use it to check fake news and help to prevent rumours.

### 6.2 PROBLEM ENCOUNTERED AND POSSIBLE SOLUTIONS

There was a problem regarding which platform and algorithm should we use for the application development and how to get the accurate result from algorithm. There is also a problem in language selection like which programming language or framework should be used for this machine learning based project. Possible solutions for the problems are we should try two or three different algorithms on various datasets and compare the result and accuracy of the algorithms. In language selection now a day's language which best suits with data mining and web scrapping is python, so the python was chosen as a programming language.

### 6.3 SUMMARY OF PROJECT WORK

Fake news detection is an application which can be used by any internet user who wants to check that the news he or she is reading are fake or not or whether it is trustable or not. And if the news is not fake how accurate the news is. In this project user have to submit the link of the article he/she wants to check and after entering the link our website will tell that the given article or news link is fake or not after comparing it with trusted sources and how accurate the news are.

## CHAPTER 7: LIMITATION AND FUTURE ENHANCEMENT

### 7.1 LIMITATIONS

- The application is currently restricted to only news article links.
- The application is currently web based application, its android application is not available.

### 7.2 FUTURE ENHANCEMENTS

The future enhancements of any project are restricted to the technology that is currently available. The future of Fake news detection is still not completely decided yet. The possibilities include fake news detection in social media and news from various news channels will be included and android application for the same will be developed in near future. Since not everyone has an android device, the application needs to also be created for other operating systems available in the market.