PROJECT OVERVIEW STATEMENT	**Project Name:** Fake News Detection using Machine Learning Algorithms	**Student Name:** Vishnu Vardhan Reddy Bijjam

Problem/Opportunity:

Negative news nowadays, when in the digital world, trickling quickly through social media platforms and the internet, has become a real problem. This information has the power to mislead the public and destroy the quality of democratic process as well as people and society. Because so much information is happening every day and many current solutions are reliant on human fact checking, this is tiresome and ineffective. A strong automated system using machine learning might be able to further improve the detection and control of dissemination of false information.

Goal:

The goal of this research is to build such a machine learning based model which can correctly separate the authentic from the fraudulent news items. The project attempts to improve effectiveness and reliability of false news identification through the use of supervised learning models and natural language processing (NLP) techniques. The end result will be a system that can help the public, social media companies and journalists to recognize and minimize false information.

Objectives:

Objective 1:

This is a task of constructing the text classification model, which can recognize fake news from original news.

Time Window: After two months of the start of the project.

Classify phony and authentic news pieces with accuracy of least 85%.

Objective 2:

Conclusions: In order to increase classification accuracy it is suggested to create a deep learning model like LSThm or BERT, Time: Two months after start of the project.

Objective: Improve robustness and accuracy better than standard machine learning models.

Act: Increase deep learning ability for false news detection via training and optimization of architectures.

Objective 3:

The flexible cleaver is used to understand the model forecast.

 Within one month of the start of the projects.

 Explain comprehensibly how news articles are being classified as authentic or fraudulent.

Do something: To ensure transparency, apply SHAP or LIME to tell what the model's decisions are.

Objective 4:

Outcome: Develop a web-based dashboard or browser plugin for real-time news verification.

Time Frame: 2 months after the start of the project.

Create: An interactive tool to discover fake news that allows users to put text or URLs.

Make the model accessible in a public web based interface: take action.

Objective 5:

Outcome: The system is compared to current fallacious news discovery techniques and found to perform well on well-established actual information sets.

Time Frame: One month after the projects start.

Confronted comparison: Compare the model's output with the best techniques available.

The results should be reported and empirical analyses should be done.

Success Criteria:

The requirements for the project to be considered successful are the following:

- It has at least 85 percent accuracy detecting bogus news.
- The choice of a deep learning model to predict the GPU has better performance than conventional methods.
- This method proves to be very informative with regards to the classification process.
- Such a web site is created as a tool for the use of general public.
- It is assessed for system performance on the real world datasets and the results are recorded.

Assumptions, Risks, Obstacles:

This project might have some variables that may affect its success. It is thought to be a good real world false news situation and diversified dataset. Potential hazards includes biased training data, adversarial attacks on the detection algorithms, changing disinformation pattern that can demand frequent updates of model. Interpretable and generalizable will be one of the bigger problems. Scalable dataset updates, complete testing and human in the loop verification processes are all examples of good risk reduction techniques.

Prepared By	Date	Approved By	Date
Vishnu Vardhan Reddy Bijjam	02/06/2025		