Conclusion

The project successfully implemented a fake news detection system using three machine learning models **Logistic Regression**, **Random Forest**, and **BERT** on a sample version of the **LIAR dataset**. Through preprocessing, feature extraction, and model training, we evaluated each model's ability to classify news statements as true or false.

The performance comparison revealed that **BERT** significantly outperformed the traditional models in terms of accuracy, thanks to its deep contextual understanding of language. However, models like **Logistic Regression** and **Random Forest** proved to be faster and more efficient for smaller datasets, making them suitable for scenarios with limited computational resources.

Overall, the project demonstrates that machine learning can be a powerful tool in automating fake news detection, with BERT showing the most promise for real-world applications that require high accuracy and language comprehension.

Future Enhancement

- **Larger Dataset:** Use a bigger and more diverse dataset to improve model accuracy and coverage.
- **Multilingual Support:** Extend the system to detect fake news in multiple languages.
- **Real-Time Detection:** Develop a real-time fake news detection system for instant use.
- **Model Efficiency:** Make models faster and lighter for quicker predictions.
- **Cross-Platform Integration:** Implement the system into social media platforms and news websites for real-time alerts.

User Feedback: Add a feedback feature to help improve the system’s accuracy over time