

PhishNetGuard

A PHISHING WEBSITE DETECTION SYSTEM

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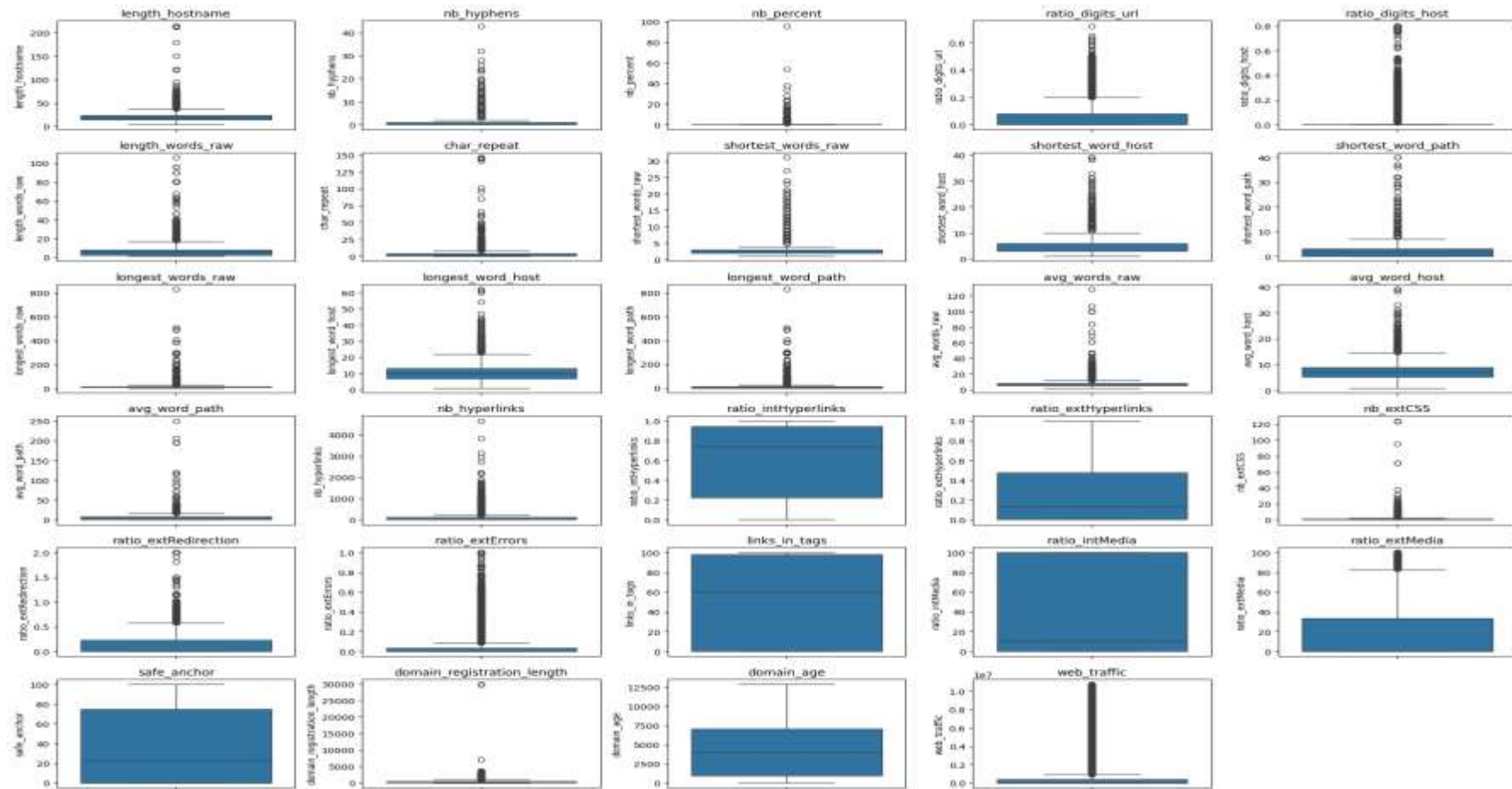
PROBLEM STATEMENT

Phishing attacks have become one of the most common and dangerous online threats, where fake websites are designed to resemble real ones, stealing personal information such as passwords or bank details. Traditional methods like blacklists or simple rule-based systems often overlook these new and cleverly disguised phishing sites. As a result, users remain vulnerable to scams. To address this issue, this project focuses on using Machine Learning and Deep Learning to develop smarter, automated systems that can detect phishing websites more accurately. By analysing aspects like URL structures and website content, the goal is to create models that can reliably distinguish between real and fake websites and help protect users from online fraud.

DATASET AND ITS INFORMATION

- The dataset contains:
 - Features: URL-based indicators (like having '@', length, HTTPS, etc.)
 - Target variable(Status): 1 (Phishing) or 0 (Legitimate)
- Shape:
- [11430,89]

DATA VISUALIZATION BEFORE FEATURE SCALING



MODEL BUILDING

MACHINE LEARNING MODELS USED:

- **Logistic Regression**
- **Random Forest Classifier**
- **Support Vector Machine (SVM)**
- **Decision Tree**
- **K-Nearest Neighbours (KNN)**

Split dataset:

- **80% Training**
- **20% Testing**

DEEP LEARNING MODELS USED:

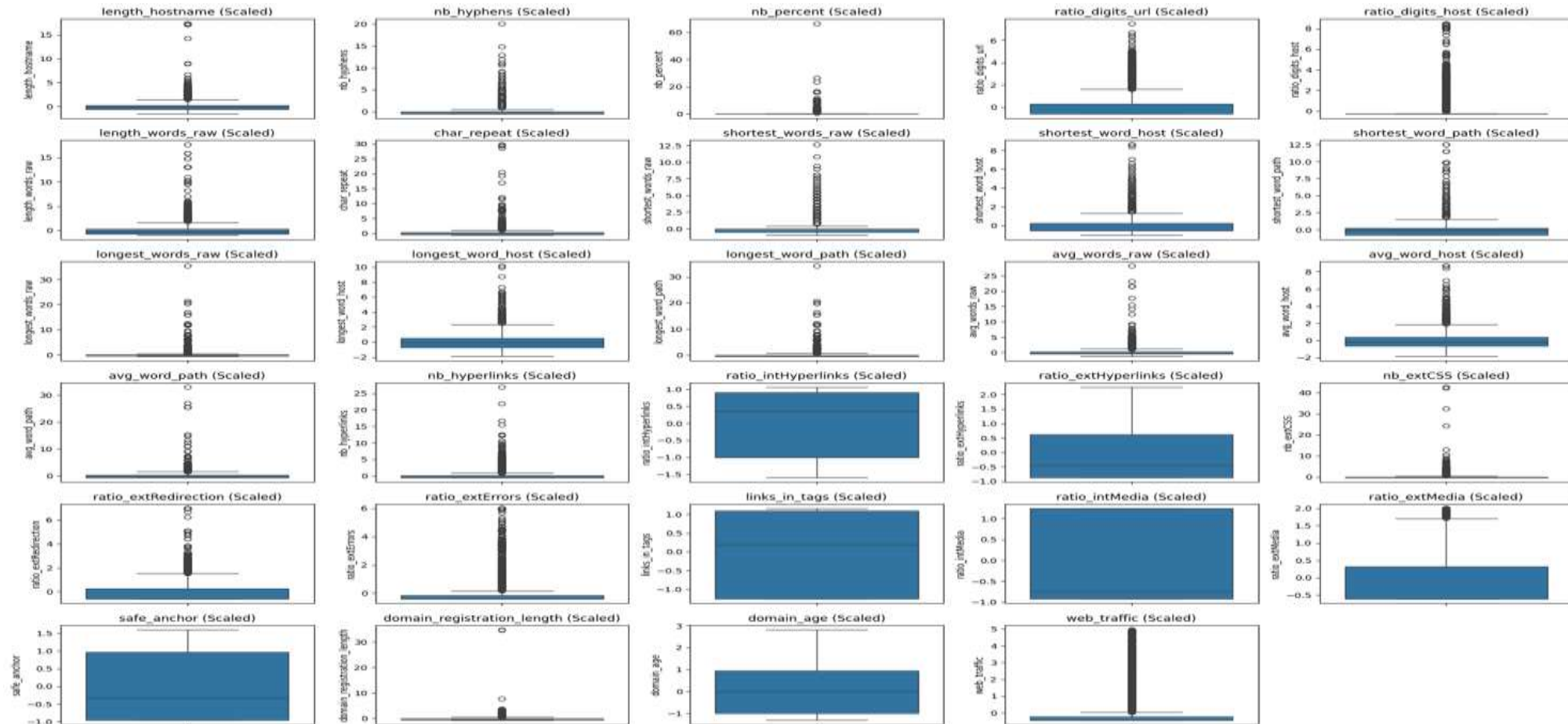
- **LSTM**
- **BI-LSTM**

epochs = 13/50
batch_size=32

RESULT BEFORE FEATURE SCALING

Classification Report	Logistic	Decision Tree	Random Forest	SVM	KNN
Precision	0.79	0.93	0.97	0.56	0.82
Recall	0.78	0.93	0.96	0.88	0.86
F1-Score	0.79	0.93	0.97	0.68	0.84
Accuracy	0.79	0.93	0.97	0.60	0.84

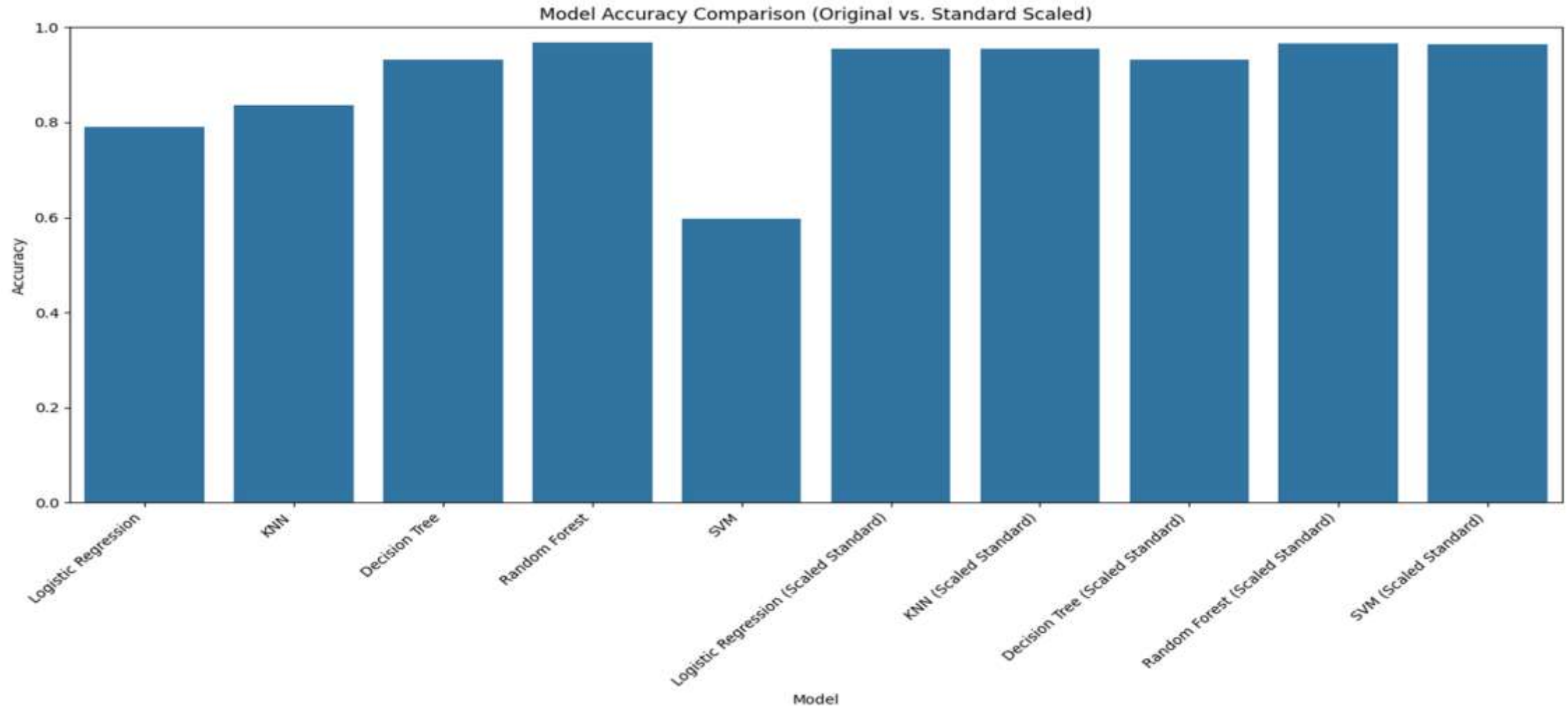
DATA VISUALIZATION AFTER FEATURES SCALING



RESULT AFTER FEATURE SCALING

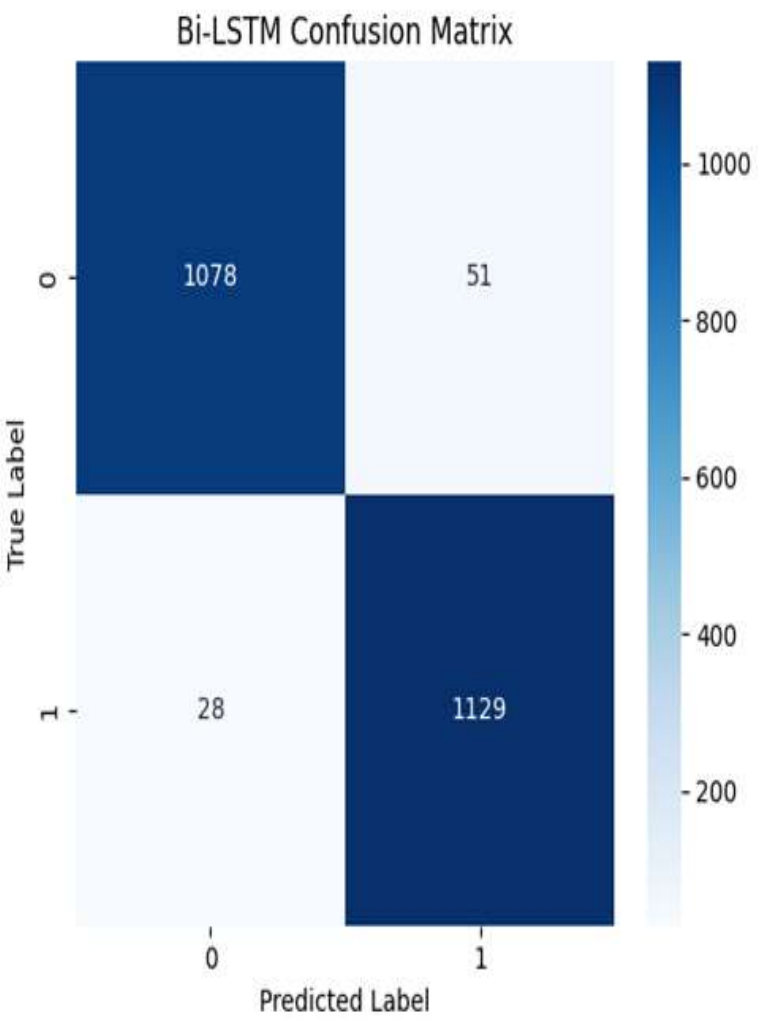
Classification Report	Logistic	Decision Tree	Random Forest	SVM	KNN
Precision	0.96	0.93	0.97	0.97	0.97
Recall	0.95	0.94	0.96	0.95	0.94
F1-Score	0.95	0.93	0.97	0.96	0.95
Accuracy	0.95	0.93	0.97	0.96	0.95

COMPARISON BETWEEN FEATURE AND SCALED DATA

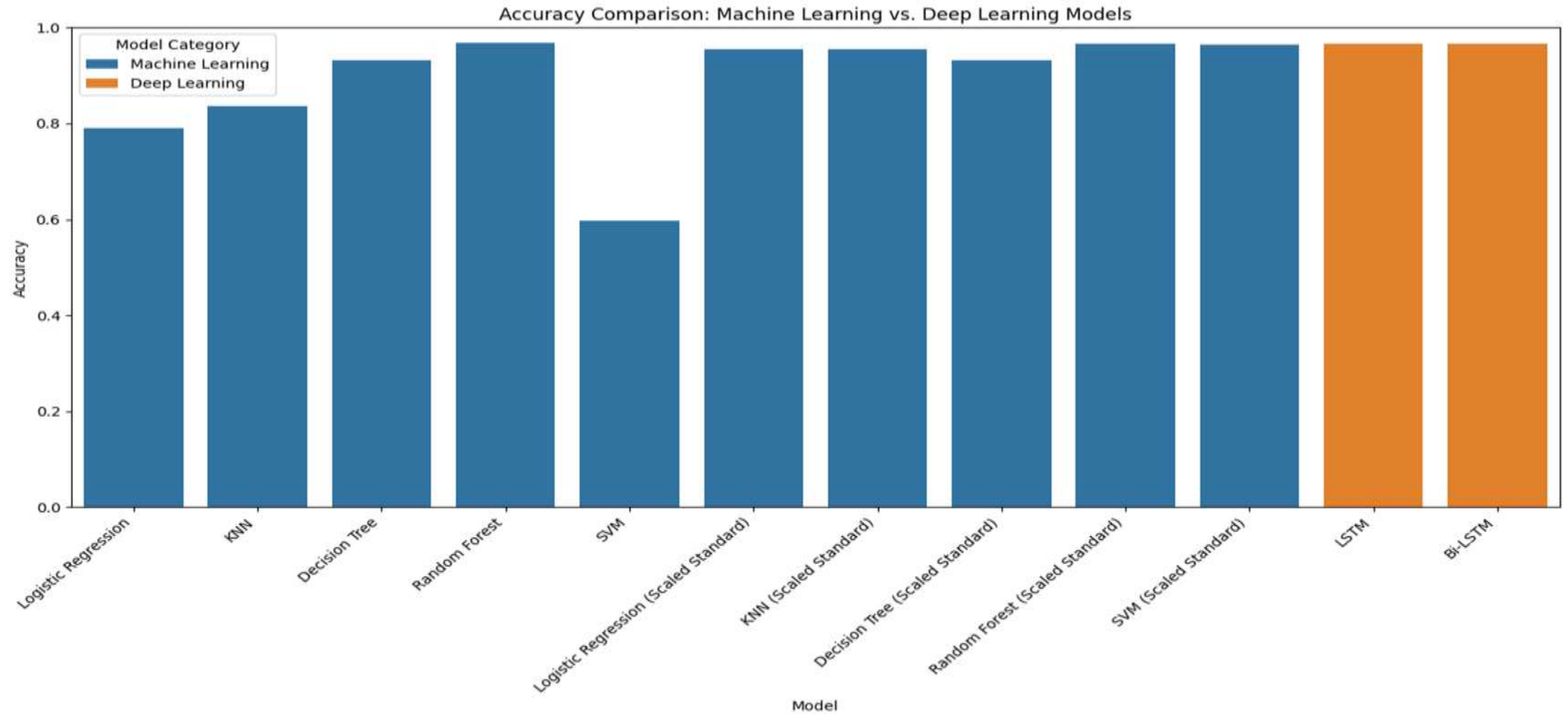


DEEP LEARNING MODEL EVALUATION

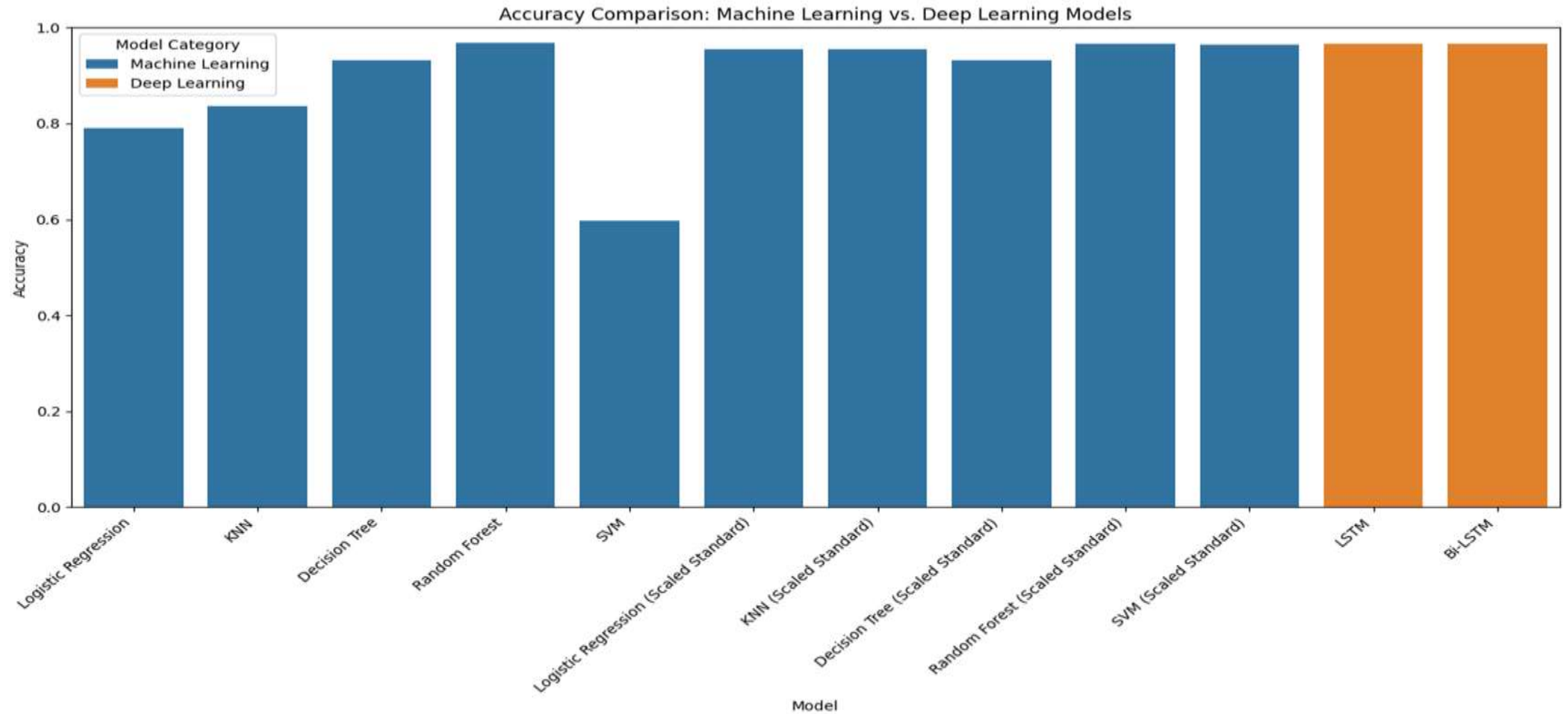
Classification Report	LSTM	Bi-LSTM
Precision	0.97	0.97
Recall	0.96	0.95
F1-Score	0.97	0.96
Accuracy	0.97	0.97



FINAL COMPARISON BETWEEN THE MODEL



FINAL COMPARISON BETWEEN THE MODEL



SOCIETAL IMPACT

PhishNetGuard helps protect people from phishing attacks by using intelligent models to detect fake websites. This is especially useful for everyday internet users who may not recognize online threats. By preventing data theft and online fraud, the project promotes safer browsing and supports a more secure digital environment for individuals, schools, and businesses.

CONCLUSION AND REFERENCES

Phish Net Guard demonstrates the effectiveness of ML and DL in phishing website detection using a Kaggle dataset. Models like KNN, SVM, Logistic Regression, Decision Tree, Random Forest, LSTM, and Bi-LSTM were evaluated, with Random Forest and Bi-LSTM achieving the highest accuracy (97%) by capturing URL patterns effectively. The project shows how combining ML and DL provides a scalable, reliable solution. Future improvements include a user-friendly interface (e.g., Streamlit or Flask) and a browser extension for real-time phishing alerts

❑ The dataset which I have used is :



Microsoft Excel
na Separated Va

❑ SOURCE CODE:



Jupyter Source
File

❑ GitHub Link: [vikrantsingh00/FINAL-PROJECT-MICRSOFT-INTERNSHIP-: A Phishing website detection system](https://github.com/vikrantsingh00/FINAL-PROJECT-MICRSOFT-INTERNSHIP-: A Phishing website detection system)

Thank you