Email Phishing Detector using Machine Learning

Overview
 This project presents a machine learning-based email phishing detection system developed as part of the **Cybersecurity Internship 2025** organized by **Digisuraksha Parhari Foundation** and powered by **Infinisec Technologies Pvt. Ltd.**

Phishing emails are one of the most widespread cyber threats. Our tool helps identify such emails using NLP and machine learning techniques and provides real-time feedback via a graphical interface.

Problem Statement
 Email phishing scams are increasing rapidly and are often missed by traditional spam filters. Attackers impersonate trusted sources to steal sensitive information. There's a critical need for an intelligent tool that can analyze email content and detect phishing attacks effectively.

Objectives

- Develop a phishing detection model using machine learning.
- Analyze email content using NLP techniques.
- Provide real-time predictions and feedback via a GUI.
- Educate users on email hygiene and phishing patterns.

Tech Stack

- Python 3
- Scikit-learn

- NLTK
- Pandas, NumPy
- Streamlit (GUI)
- TF-IDF (Text Feature Extraction)

Features

- Classifies emails as "Phishing" or "Legitimate"
- Shows protection level (High Risk / Moderate Risk / Safe)
- Offers suggestions to improve suspicious email drafts
- Easy-to-use graphical interface for all users

Setup Instructions

1. **Clone the Repository**

```bash
CopyEdit
git clone  https://github.com/pralabhkushwaha/pralabhkushwaha

cd https://github.com/pralabhkushwaha/email_phishing_detector
```

2. **Install Dependencies**

```bash
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pip install -r requirements.txt
```

3. **Run the App**

```bash
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streamlit run app.py
```

4. Enter Email Content and Get Prediction

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MIT License. This tool is for educational and defensive purposes only. We do not promote or support any unethical activities.

Research Paper

The complete research documentation is available at:

`/research-paper/research_paper.pdf`

Presentation Slides

`/presentation/presentation.pdf`

Developed By

Pralabh Kushwaha

Team REDVENOM

Email: kushwahapralabh@gmail.com

GitHub: https://github.com/pralabhkushwaha/pralabhkushwaha

Final Submission

This repository has been submitted for final review to **support@digisuraksha.org**

Subject: `Internship Final Submission - Pralabh Kushwaha / REDVENOM`

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