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ONLINE THREAT MONITORING SYSTEM

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Abstract:

In the recent times, terrorism has grown in an exponential manner in certain parts of the world. This enormous growth in terrorist activities has made it important to stop terrorism and prevent its spread before it causes damage to human life or property. With development in technology, internet has become a medium of spreading terrorism through speeches and videos. Terrorist organizations use the medium of theinternet to harm and defame individuals and also promote terrorist activities through web pages that force people to join terrorist organizations and commit crimes on the behalf of those organizations. Web mining and data mining are used simultaneously for the purpose of efficient system development. Web mining even consists of many different text mining methods that can be helpful to scan and extract relevant data from unstructured data. Text mining is very helpful in detecting various patterns, keywords, and significant information in unstructured texts. Data mining and web mining systems are used for mining from text widely. Data mining algorithms are used to manage organized data sets and web mining algorithms can be helpful in mining and extracting from unstructured web pages and text data that is available across the web. Websites built in different platforms have varying data structures andthat makes it quite difficult to read for a single algorithm.

Introduction

In today's interconnected world, the rise of illegitimate and extremist ideologies has found a new breeding ground on the internet. Organizations have adeptly harnessed social media platforms like Facebook, WhatsApp, and messaging services to disseminate their propaganda, making the swift detection and prevention of illegitimate online spread an urgent global imperative. This project seeks to address this pressing concern by harnessing the power of technology to counteract the digital proliferation of extremist content.In this era of rapid technological advancement, this work is essential for maintaining global security and ensuring that the internet remains a force for good rather than one for radicalization and harm. Organizations are using the internet to spread their propaganda and radicalize youth online and encourage them to commit terrorist activities. In order to minimize the online presence of such harmful websites we need to devise a system which detects specific keywords in a particular website. The website should be flagged inappropriate if the keywords are found for efficient system development. Data mining consists of text mining methods that help us to scan and extract useful content from unstructured data. Text mining helps us to detect keywords, patterns and important information from unstructured texts. Hence, here we plan to implement an efficient web data mining system to detect such web properties and flag them for further human review. Data mining is a technique used to extract patterns of relevant data from large data sets and gain maximum insights to the obtained results. Web mining as well as data mining are used simultaneously for efficient system development. significantly improves the current system and eliminates the flaws that exist in the existing system.

Proposed System

The primary goal of proposed system is to develop a website where users can check any webpage or any website for any trace of illegitimate activity. To do so, our website will provide the feature of entering the URL of the webpage the user wants to scan. After entering the URL, system will check the words of the whole webpage and tally them with the words that are already present in the database. Each word that stores in the database will have a certain score to it. The system will fetch the scores of each word that is present in the user's web page from the database, and in the end, it will calculate a total rank of the website. This rank will determine if the user's webpage contains any trace of activities like terrorism or not.System will detect patterns, keywords and relevant information in unstructured texts in a webpage using web mining as well as data mining

System Architecture

Design

The system architecture provide details of how the components or modules are integrated and is described with the help of Unified Modelling Diagrams. A system architecture is the conceptual model that defines the structure, behaviour, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supportsreasoning about the structures and behaviours of the system. A system architecture can comprise system components, the expand systems developed, that will work together to implement the overall system.

The below (fig 3.1) indicates the Architecture of web mining detection of online spread of terrorismWe want to sign up or sign in the page that data will store in the database. Check website by entering URL whether it is terrorist activity site or not. After that we can logout the page.

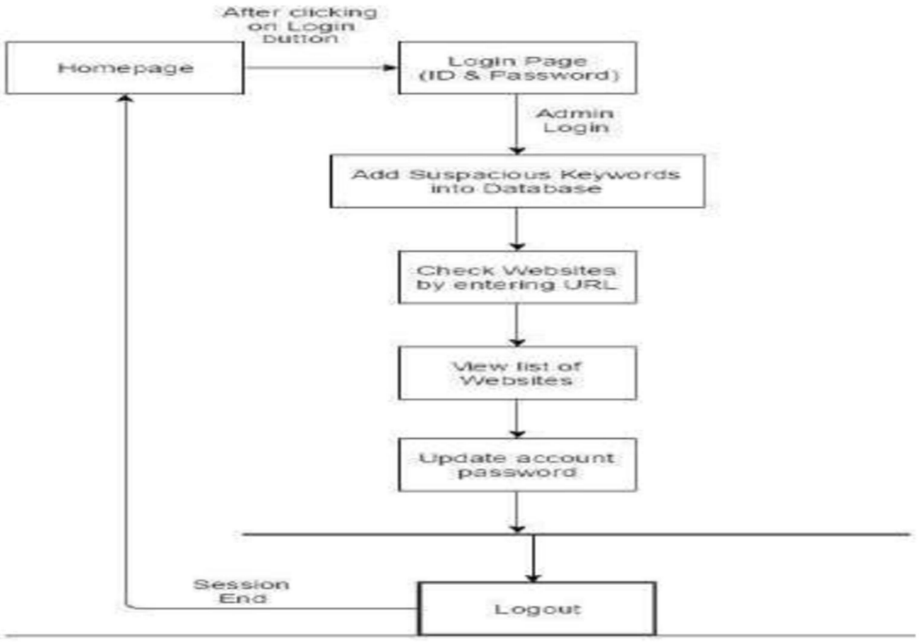

Fig1 System Architecture

Data Flow Diagram

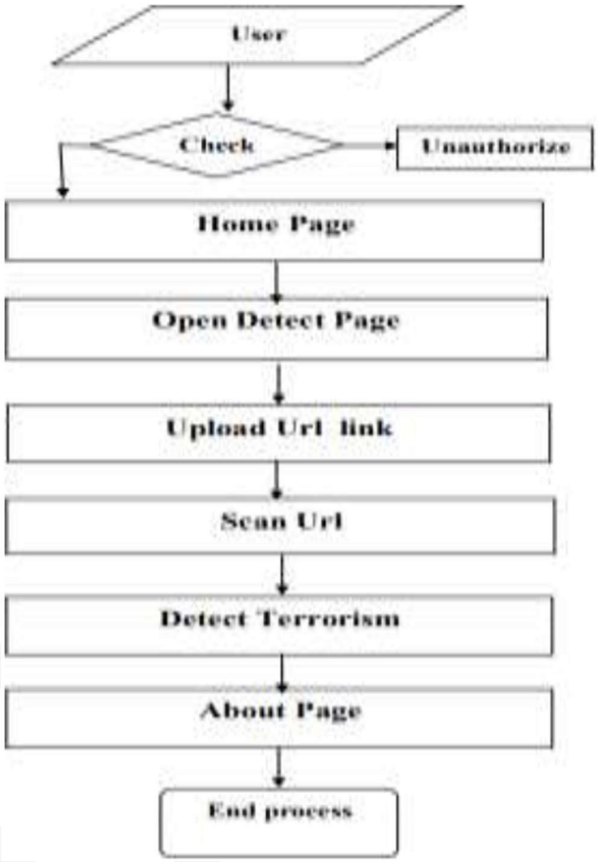

Fig 2 Data Flow Diagram

The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data,and the output data is generated by this system .

The data flow diagram (DFD) is one of the most important modeling tools. Itis used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.

Implementation

Technologies

Python

Python is a powerful programming language and a higher – level language. Python has straightforward declarations in English that allow us to know the code without much expertise ofit. With its use of a considerable whitespace, Python's structure allows readability of the code.

NumPy

NumPy or Number Python is a library for certain array functions. It contains a n dimensional arrayobject useful for the whole array to apply algebra and different other mathematical formulas. Theobject NumPy can also be called the array NumPy. It stores information so that mathematical calculations are effectively carried out.

Pandas

Pandas is a data manipulation and analysis programming language written in Python. It includes data structures and procedures for numerical tables and, in particular, time series manipulation.

Sklearn

Scikit-learn is a free machine learning package for Python. Python supports numerical and scientific libraries such as NumPy and SciPy, and it includes many techniques such as vector support machines, random forests, and k-neighbors.

Seaborn

Seaborn is a Python data visualization library based on Matplotlib. While Seaborn is not directlyinvolved in the prediction. It can be immensely helpful in visualizing and understanding the data,which is a crucial step in any data analysis or prediction task.

Test Cases

S No	Test case description	Input	xpectedOutput	Actual Output	Status
1	d TrainingDataset	CSV file	Read Dataset	Load Dataset	Success
2	Split Dataset	in80% andtest20%	Read Dataset	Load Dataset	Success
3	Train Model	Train dataset, randomvalue,predicted class	in with bestaccuracy	in with bestaccuracy	Success
4	Validate the Model withbestfit	No. of epochs	Validate the Modewithbest fit	Model Generated	Success
5	edict Accuracy and errorrate	Accuracy	Plot expectedaccuracy andpredicted accuracy	cted predictedaccuracy	Success

6	Test Data	Test column	Predicted accuracy	Predictedaccuracy	Success

Table 1 The test cases for Online Threat Monitoring System

RESULTS

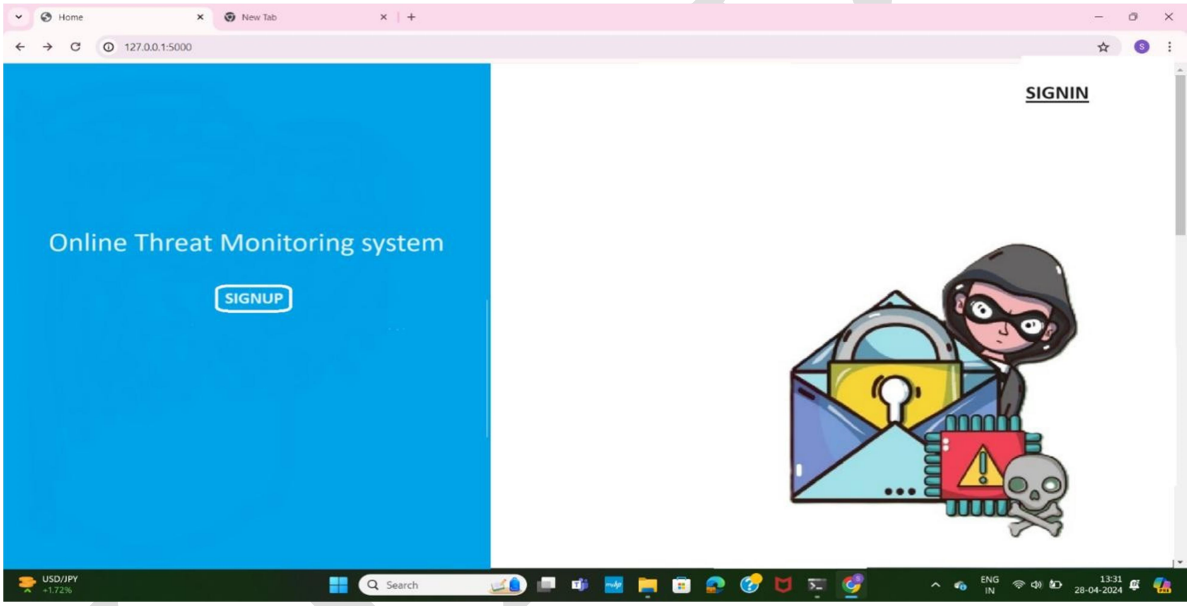

Fig 3 SignUp Page

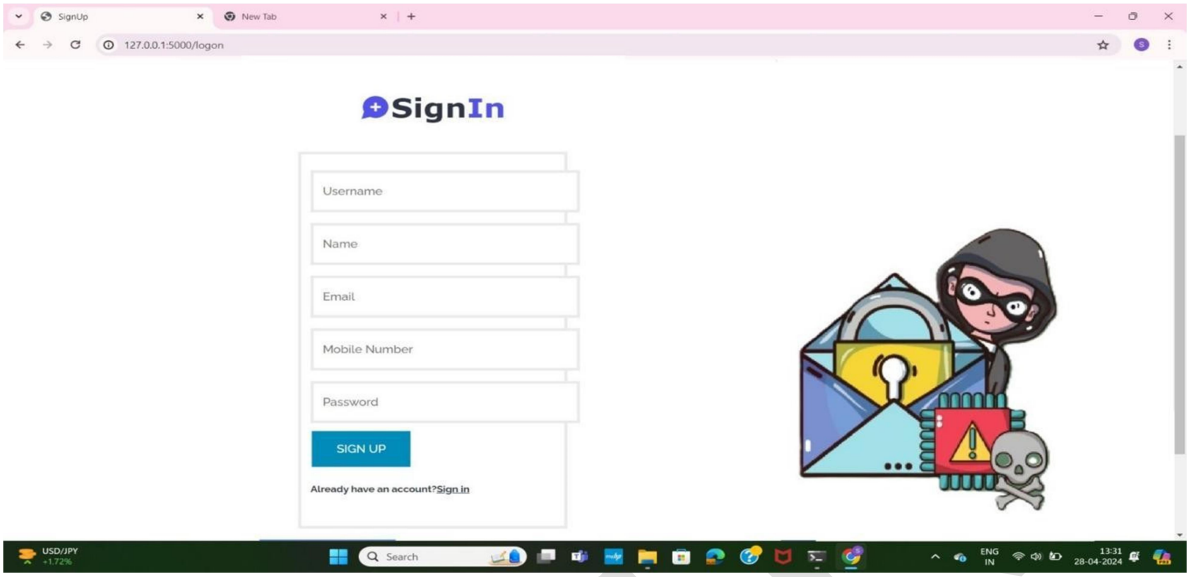

Fig 4 SignIn Page

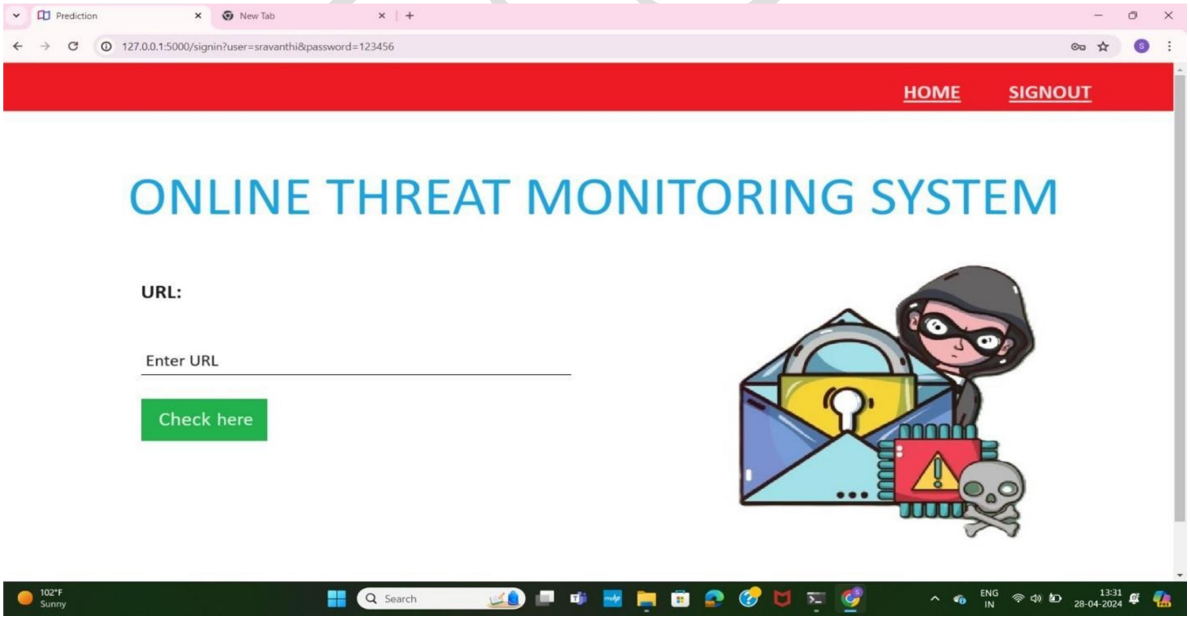

Fig 5 Home Page

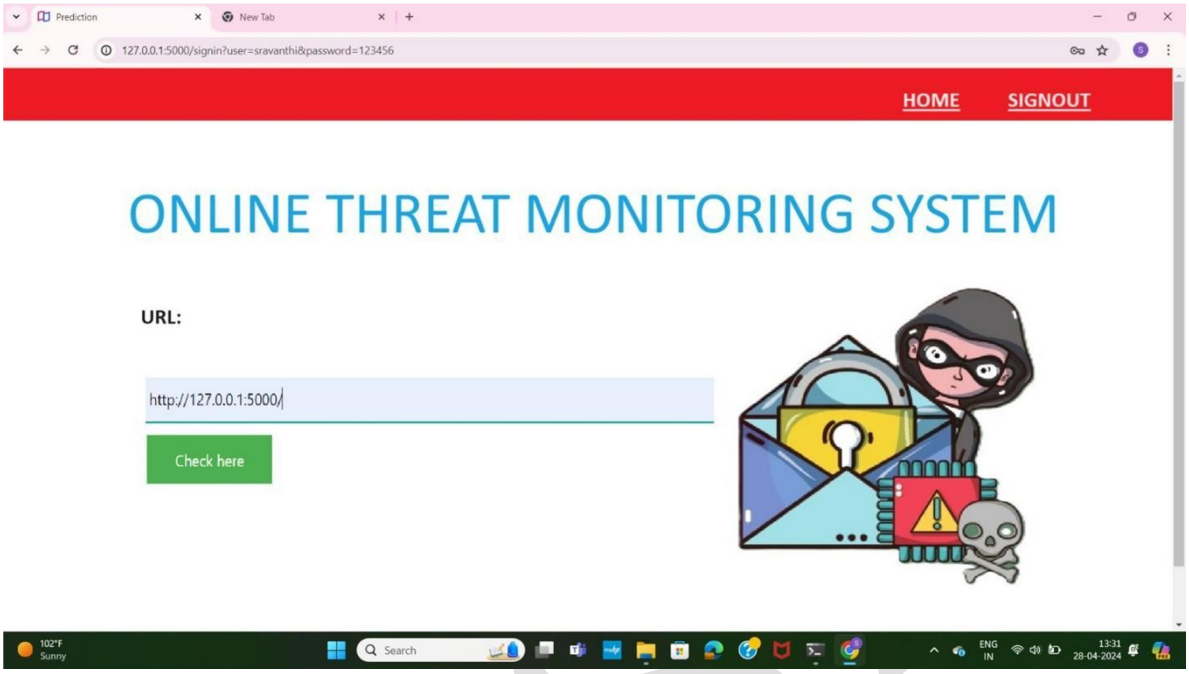

Fig 6 Entering the URL

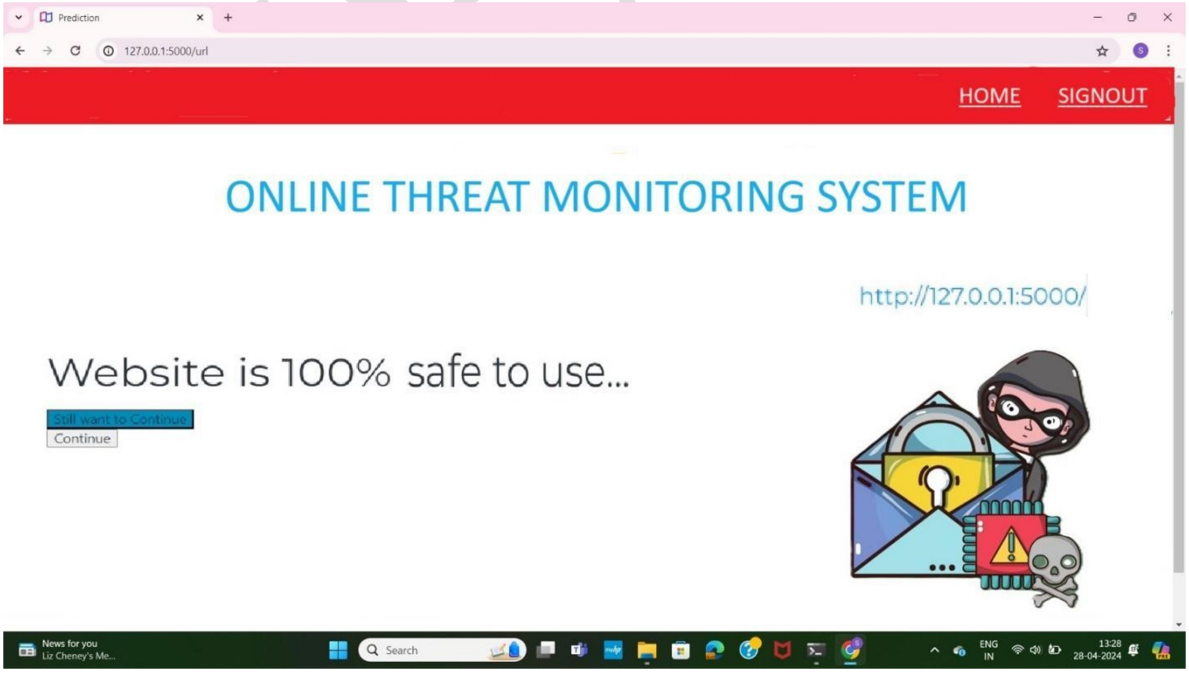

Fig 7 Testing the URL

Conclusion and Future Scope

To stop illegitimate acts and shut down dangerous groups like ISIS and extremist websites, thereis a need to take action to prevent them from spreading their message and recruiting followers online. The proposed system helps to detect and terminate websites which are spreading harmful content used to radicalizing youth and helpless people. By harnessing the vast amount of data available on the internet, including social media, forums, and websites, security agencies and organizations can identify and address potential threats in a proactive manner..

Future Scope

There can be module where illegal organizations communicating in code words can be tracked by the system itself. In proposed system, system tracks susceptible IP Address and provides the information to the officials using the system. In later, system will track particular susceptible person who is sending illigimate messages.

References

[1] R. Kumar, S. Kumar, and S. Das, "Real-time threat detection and analysis using machine learning techniques, IEEE , vol. 16, no. 3, pp. 890-899, Mar. 2021.

[2] A. Patel, Q. Qassim, and K. Wills, "An adaptive online threat monitoring system for cybersecurity," IEEE , vol. 8, pp. 176030-176045, Oct. 2020.

[3] D.M. Zhang and Y. Li, "Behavior-based anomaly detection in online threat monitoring systems," IEEE, vol. 17, no. 2, pp. 1024-1036, Jun. 2020.

[4].S. Thakur and P. Singh, "Design and implementation of a cloud-based online threatmonitoring system," in 2021 IEEE, Jul. 2021, pp. 150-157.

[5]L. Garcia and A. Kim, "Enhancing online threat detection with AI and big data analytics," IEEE, Dec. 2020, pp. 1805-1812.

[6]J. Doe, A. Brown, and K. Green, "A real-time online threat monitoring framework for IoTenvironments," IEEE, Jul. 2019, pp. 330-337.