

# Blockchain Based Event Detection and Trust Verification using Natural Language Processing and Machine Learning

## Abstract:

Information sharing is one of the huge topics in social media platform regarding the daily news related to events or disasters happens in nature or its human-made. The automatic urgent need identification and sharing posts and information delivery with a short response are essential tasks in this area. The key goal of this research is developing a solution for management of disasters and emergency response using social media platforms as a core component. This process focuses on text analysis techniques to improve the process of authorities in terms of emergency response and filter the information using the automatically gathered information to support the relief efforts.

Specifically, we used state-of-art Machine Learning (ML), Deep Learning (DL), and Natural Language Processing (NLP) based on supervised and unsupervised learning using social media datasets to extract real-time content related to the emergency events to comfort the fast response in a critical situation. Similarly, the blockchain framework used in this process for trust verification of the detected events and eliminating the single authority on the system. The main reason of using the integrated system is to improve the system security and transparency to avoid sharing the wrong information related to an event in social media.

## Existing System:

Recently, IoT and blockchain using machine learning has brought an immense revolution in various walks of life by converging the physical and digital world together, especially in the area of healthcare, navigation, security, cloud computing, and smart grid systems. In this section, various social media platforms discussed which extract the information related to crisis for supporting the activities related to disasters. In the existing system, they proposed the optimization algorithm based on dynamical clustering to get more accurate and faster configuration for the system of electronic commerce. In another approach, based on applying the optimization algorithm, they tried to solve the problem of efficient community detection identification. In [26], Hui-Jia Li *et al.* proposed the solution for the problem of epidemic spreading by applying the dynamic approach on signed network.

## **Proposed System:**

The main focus of this system is creating a cloud-based environment for the management of the crisis in social media using social media analytics. The key point of the developed environment is the augmentation of available sensor-based Disaster Risk Management (DRM) with the capability of social media to keep the human sensor in public. This process activates the authority of the related disaster management for integrating and internet-based data access based on applying semantic analysis for action generating and content responses.

The collected results can be used to monitor the related emergency and management of disasters, early warning, risk mitigation, and assessments. This architecture has four main components: event identification, automatic reasoning, incident monitoring and blockchain. The event identification uses real-time data from social networks. Automatic reasoning extracts the information and knowledge from accessible data using intelligent techniques. Incident monitoring, processes the knowledge-based professional emergency using the sensory interfaces and blockchain framework analyse the security and transparency of system and similarly the proof-of-authority for having the secure and stable system based on trust.

## **Software Tools:**

1. VS Code
2. Jupyter Notebook
3. Anaconda
4. Ganache
5. Metamask
6. Solidity
7. Web3.js
8. Python3

## **Hardware Tools:**

1. Laptop
2. Operating System: Windows 11
3. RAM: 16GB
4. ROM: 10GB
5. Fast Internet Connectivity

## **Applications:**

1. More kind of Machine Learning applications like sentimental analysis and feature extraction and processing can also be implemented through this architecture.