

## Decentralized News Publication Platform

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**Abstract** - Fake News has become a huge alarming issue since the previous few years. It can be used to influence people on any political, economical or social topics and change people's thoughts on a particular subject. We're using a blockchain based technique to overcome this problem. More specifically the proposed approach uses concepts of customized proof of authority and proof of truthfulness consensus algorithm serving as an incentive mechanism to determine the integrity of fake news. As Blockchain is a decentralized system no one will be able to tamper with the original news. Also, we are maintaining the reputation score of each organization. Due to fear of lowering credibility score, no one will produce fake news and the probability of fake news getting viral will be reduced. This platform which is a blockchain based Decentralized application can provide normal readers on the platform with a reliable way of verifying the content and the source by which it gets published. Our work demonstrates that the solutions proposed in this paper ensure data integrity, data security, data transparency, and data traceability by consideration of such a blockchain-based framework for tackling fake news.

**Key Words:** *Decentralized Applications, Decentralised Autonomous Organisation, Decentralized Exchange, Peer To Peer, Ethereum Virtual Machine*

### 1. INTRODUCTION

Fake news has become a huge concerning issue among users who consume such content on a daily basis. It can be used to influence people on any political, economical or social topics and change people's thoughts and opinions on a particular topic. Fake news is not in general a new problem in people's lives but with information and rumor-spreading continuously being the case in human interaction, recent developments like the benefit of generating and diffusive digital content, the employment of social networking websites, and also the development of computing (AI) and machine learning (ML), particularly deep learning (DL) based mostly milliliter ways, for generating faux content has greatly exacerbated and increased this menace.

### 2. MOTIVATION

1. For normal citizens, "Fake/Deceptive News" has become a huge problem that is getting increasingly difficult to tackle.
2. It can be used to influence people on any political, economical or social topics and change people's thoughts on a particular subject, thus threatening the basic democracy and ideology of a person.
3. Exploring the potential of blockchain to rein the news truthfulness to the world, by detecting and handling the spread of fake news.

### 3. OBJECTIVES

To understand what are the essential elements that make such content spread virally and prevent them. To analyze and study how news gets exaggerated by organizations and detect the sources To find differences between verified and unverified organizations. To give people correct news without misleading them.

These Involve four major objectives:

1. To understand the major reasons behind the spread of viral fake exaggerated content.
2. To research however, faux news is made and to find the sources
3. To reason between verified and unverified organizations.
4. To allow individuals to have access to correct news while not deceiving them.

### 4. LITERATURE SURVEY

Paper[1] *Qian Chen, Gautam Srivastava, Reza M. Parizi, Moayad Aloqaily, Ismaeel Al Ridhawi, "An incentive-aware blockchain-based solution for internet of fake media things", 2020 Elsevier*

Proposes a preventative approach using a novel blockchain-based solution suited for IoFMT incorporated with a gamification component.

Paper[2] *Adnan Qayyum, Junaid Qadir, Muhammad Umar Janjua, Falak Sher, "Using Blockchain to Rein in the New*

*Post-Truth World and Check the Spread of Fake News”, 2019 IEEE Computer Society*

In this paper, they propose a high-level overview of a blockchain-based framework for fake news prevention and highlight the various design issues and considerations of such a blockchain-based framework for tackling fake news.

**5. BLOCKCHAIN CONNECTED BACKGROUND**

**5.1 Scientific discipline Hashing: scientific discipline Hashing:**

A hash perform method is a scientific discipline that accepts an input of any size and returns a set size output. A scientific discipline “hash perform” function basically needs to cover 3 essential security properties: specifically hiding, collision-free, and puzzle friendliness. Concealment property implies that if the output of a hash perform is understood, it's not possible to find out input price for respective hash and collision-free property ensures that for 2 completely different input values the hash output should always differ. So in order to sort out an answer in exceedingly Large input size, the puzzle friendliness property is employed to form a mathematical search puzzle.



Figure 1: Hashing

**5.2 Blockchain and hash Pointers:**

A joined list of engineered hash pointers constitute a blockchain ledger wherein a hash pointer is solely a pointer that offers the location of the hold on info together with its scientific discipline hash. In the blockchain, a pointer to the previous block may be a hash pointer that contains a digest(some information and pointer of that block). Thus, the blockchain arrangement provides a tamper-evident log of the hold on transactions. As an example, when modifying the transactions in every block, a resistor must modify all hash pointers on all told consecutive blocks, which is sometimes quite impractical as it disrupts the entire blockchain ledger network that has been previously established.

**5.3 Distributed Consensus:**

The backbone of all cryptocurrencies that are blockchain enabled is distributed accord. A distributed accord protocol used to add a state of affairs wherein some of the collaborating nodes keep measuring malicious or faulty transactions. The distributed accord ought to have the subsequent 2 properties:

1. All verified nodes ought to terminate at a similar price,
2. That price should be planned by an verified node. The distributed accord protocol employed by Bitcoin is proof-of-work (PoW) protocol which emphasizes on verification of the nodes in the blockchain ledger.

**5.4 Proof-of-Work:**

The prisoner accord protocol was oriented by Bitcoin, and also

the key goal of victimization of prisoners is to stop double disbursement attack, which is accomplished through hash puzzles on every occasion a random node is chosen to propose a brand new block, and with each success publish a block, it is needed to seek out a present. The present may be a price that, once concatenated with the previous hash pointer and list of transactions and so hashed along, ought to be less than the predefined target, as delineated by (1), shown below. Finding the nonce values for each node is computationally highly intensive and is called mining. Also the node that achieves success i.e. realizes this price, is named a manual laborer node. A manual laborer node broadcasts its new block, and all the other nodes on the blockchain ledger network have to settle for it on the condition that all transactions in this block square measure are verified, valid, unspent, and square measure signed by valid signatures. The nodes categorize the acceptance of the block together with its hash within the next block that gets produced by the node itself.

**5.5 Digital Signatures:**

A digital signature is a special mathematical technique that provides a unique digital analogy to the written signatures and has 2 essential properties, i.e., solely you'll be able to create your signatures, and nobody will copy them (i.e., unforgeable). This special domain is critical not only in cryptography but also in hash functions. in an exceedingly blockchain-based system like Bitcoin, digital signatures area unit created employing a secret and public key try, wherever a sender uses the key to sign a dealing and receiver, and any collaborating node within the P2P network, it will start verifying that it's signed below the sender's public key in order to avoid any packet mismanagement on the network.

**6. SYSTEM DESIGN:**

**6.1 Software Requirements:**

NextJS	v11.0.0
NodeJs	v16.13.0
Firebase	v8.8
Ganache	6.12.2
Truffle Suite	v8.9.4
Metamask	v10.8.0
Vscode	v1.63.2

**6.2 Proposed Solution:**

An important part of our approach mentioned before, is the bespoke Proof-of-Truthfulness protocol that has an accord algorithmic program used for the credit score of the faux Media Things in question. News organizations can create new News publication; and support their computed credibility score. In different words, once faux Media Things get submitted for review, the group action gets into the validation method, wherever validators pinpoint them as being 'real' or 'fake', then following that they meet the standard of Fakeness (QoF) threshold, the hash of the group action gets committed to the blockchain giving flexibility into what actions to require next for publications. Whereas if the condition isn't met, seeing that we have a tendency to area unit building a sure and clear network for News Publications, the group action is listed as allegedly 'fake' and accessible for trace-ability.

**6.3 System Architecture:**

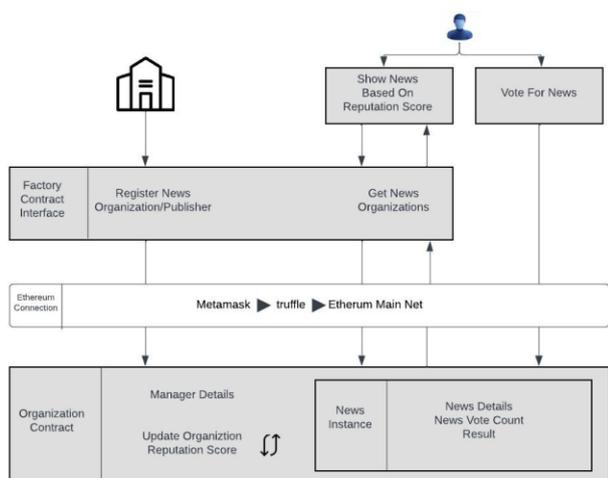


Figure 2: Architecture Diagram

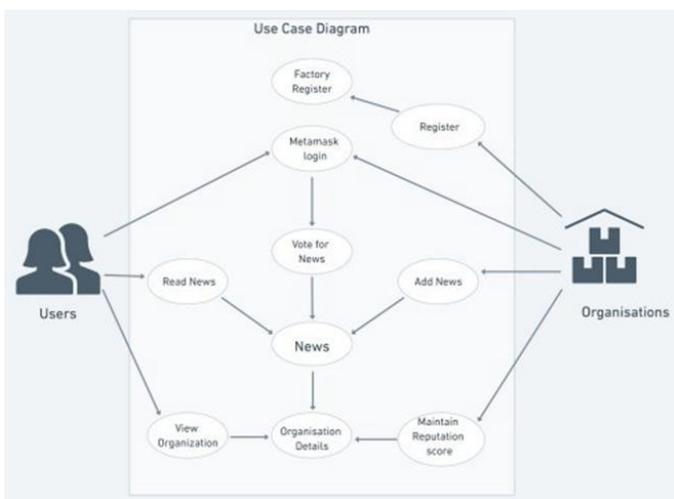


Figure 3: Use-Case Diagram

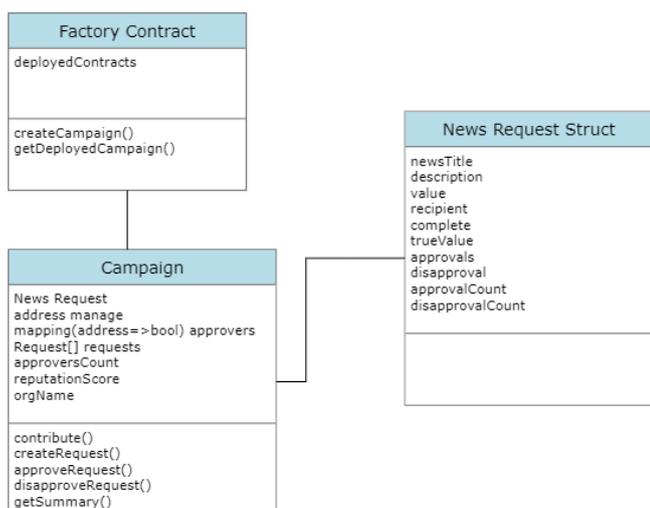
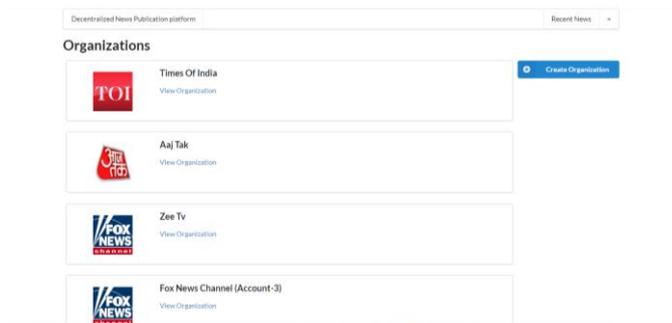


Figure 4: Class Diagram

1. **Hardware requirements:-** For implementing the whole project , we will require a robust hardware with more than 12 cores and better cooling facilities.
2. **Speed:-** As Decentralized applications have a transaction made on the blockchain for every change made by the user or organization, the application is relatively slow.

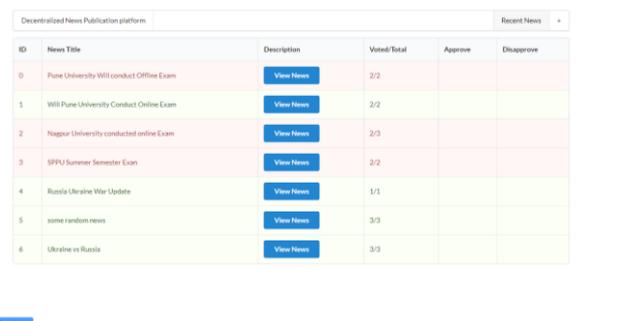
7. Result:



This is the page where we display news organizations sorted based on their reputation score.



This is the page where anyone can create any news organization campaign.



ID	News Title	Description	Voted/Total	Approve	Disapprove
0	Pune University Will conduct Offline Exam	View News	2/2		
1	WII Pune University Conduct Online Exam	View News	2/2		
2	Nagpur University conducted online Exam	View News	2/3		
3	SPPU Summer Semester Exam	View News	2/2		
4	Russia Ukraine War Update	View News	1/1		
5	some random news	View News	3/3		
6	Ukraine vs Russia	View News	3/3		

This is the page where we can see the recently published news and approve or disapprove them.

6.4 Limitations

