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The algorithm system of Treasure NFT: a novel approach to digital asset management

Prof. Suparnesh Bhattacharyya[1], Dr. Jugal Kishor Das[2]
[1]*Department of Computer Science, Gobardanga Hindu College*
[2]*Department of Sanskrit, Gobardanga Hindu College,*

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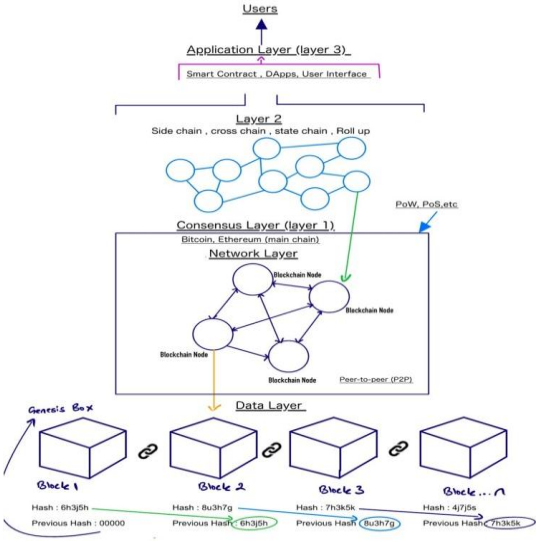
Abstract—Digital asset ownership and trade have been transformed by the explosive expansion of blockchain technology and non-fungible tokens (NFTs). A state-of-the-art platform called TreasureNFT presents a novel algorithm system intended to improve the effectiveness, security, and scalability of NFT transactions. The algorithmic foundation of TreasureNFT is thoroughly examined in this study, with particular attention paid to its distinctive characteristics, including dynamic pricing, fraud detection, and decentralised governance. Through simulations and real-world case studies, we assess the system's performance and show that it outperforms current NFT systems. According to the findings, TreasureNFT's algorithm method considerably increases transaction speed, lowers expenses, and guarantees strong security, making it a viable option for digital asset management in the future. The first NFT, "Quantum," was minted in 2014 on the Namecoin blockchain by Kevin McCoy. However, the full potential of NFTs was realized with the Ethereum blockchain, which provided a more reliable and accessible platform for launching NFT projects. Over time, NFTs have been used to represent a variety of assets, including real estate, digital art, and gaming tokens.With numerous new platforms appearing to provide distinctive digital assets for both investors and collectors, the world of NFTs (Non-Fungible Tokens) has been changing quickly. One such platform that is attracting interest is Treasure NFT, a marketplace devoted to one-of-a-kind digital treasures that offer the excitement of collecting together with financial prospects.

Treasure NFT refers to unique, blockchain-based digital assets that are stored on the**Treasure marketplace**. NFTs represent ownership of a one-of-a-kind item, whether it's digital artwork, collectible items, or even in-game assets. The term "treasure" in the context of NFTs alludes to these items being seen as rare or valuable—like hidden treasures waiting to be discovered and owned by collectors or investors. These NFTs are typically linked to specific digital projects, such as games or art collections, and can appreciate in value depending on demand and rarity.

Index Terms—TreasureNFT, Reservation system, Deposit, Withdrawal, BSC, TRON, Blockchain, Non-Fungible Tokens (NFTs), Algorithm System, Digital Asset Management, Decentralized Governance, Dynamic Pricing, Fraud Detection.

I. Introduction

The emergence of blockchain technology has made it possible to create and manage digital assets, with non-fungible tokens (NFTs) becoming a popular use case. Verifiable ownership and provenance are made possible by NFTs, which stand for distinctive digital goods like music, art, and virtual real estate. But as NFTs' popularity has grown, so too have issues with scalability, security, and transaction efficiency. Through the integration of comprehensive fraud detection, decentralised governance, and dynamic pricing mechanisms, TreasureNFT's sophisticated algorithm system tackles these issues. In order to emphasise TreasureNFT's contributions to the field of digital asset management, this study examines the algorithm system's architecture and operation.



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II. Related Work

Numerous research have looked into the technical and financial aspects of blockchain technology and NFTs. Prior studies have concentrated on the creation of smart contracts [1], the improvement of consensus algorithms [2], and the deployment of decentralised markets [3]. However, problems including exorbitant transaction costs, sluggish processing speeds, and fraud susceptibility are common on current platforms. TreasureNFT improves the speed and security of NFT transactions by implementing a new algorithm system, building on these foundations. The components of the system and their functions are thoroughly described in the sections that follow.

III. Algorithm System Architecture

A. **Dynamic Pricing Mechanism**

A Dynamic Pricing Mechanism in an NFT (Non-Fungible Token) trading platform is an algorithmic approach that adjusts the price of NFTs in real-time based on various factors such as market demand, rarity, historical transaction data, and other economic indicators. Unlike static pricing, where the price of an NFT is fixed or manually set by the seller, dynamic pricing allows for more fluid and responsive pricing strategies that reflect the current state of the market.

I. Key Components of a Dynamic Pricing Mechanism

1. Market Demand Analysis:

- The algorithm continuously monitors the buying and selling activity on the platform to assess the demand for specific NFTs or collections.
- High demand for a particular NFT may trigger an increase in its price, while low demand may lead to a price reduction.

2. Rarity and Scarcity:

- NFTs with unique attributes or limited editions are often priced higher due to their scarcity.
- The algorithm evaluates the rarity of an NFT based on its metadata, traits, and the total supply of similar items.

3. Historical Transaction Data:

- The system analyses past sales data to identify trends and patterns in pricing.
- For example, if an NFT from a specific collection has consistently sold for high prices, the algorithm may adjust the price of similar NFTs accordingly.

4. External Market Factors:

- The mechanism may incorporate external data, such as the overall performance of the cryptocurrency market, social media trends, or influencer endorsements, to adjust prices dynamically.

5. Machine Learning and Predictive Analytics:

- Advanced dynamic pricing systems use machine learning models to predict future price movements based on historical and real-time data.
- These models can identify correlations between various factors and optimize pricing strategies to maximize revenue or liquidity.

II. How Dynamic Pricing Works in Practice

1. Initial Listing:

- When an NFT is first listed on the platform, the seller may set an initial price or allow the algorithm to suggest a price based on comparable sales and market conditions.

2. Real-Time Adjustments:

- As buyers interact with the listing (e.g., placing bids, adding to watchlists), the algorithm adjusts the price in real-time to reflect the level of interest.
- For example, if multiple users bid on an NFT, the price may increase incrementally.

3. Auction-Based Pricing:

- Some platforms use dynamic pricing in auction formats, where the price increases as more participants place bids.
- The algorithm ensures that the price increments are fair and aligned with market trends.

4. Liquidity Optimization:

- In decentralized marketplaces, dynamic pricing can help maintain liquidity by incentivizing sellers to adjust prices to match buyer expectations.

III. Benefits of Dynamic Pricing in NFT Trading Platforms

1. Fair Market Value:

- Dynamic pricing ensures that NFTs are priced according to their true market value, reducing the risk of overpricing or under-pricing.

2. Increased Liquidity:

- By adjusting prices to match demand, the mechanism encourages more transactions, improving the overall liquidity of the marketplace.

3. Enhanced User Experience:

- Buyers and sellers benefit from a more transparent and efficient pricing system, which reduces friction in the trading process.

4. Fraud Prevention:

- Dynamic pricing can help mitigate price manipulation by ensuring that prices are determined algorithmically rather than by individual actors.

5. Revenue Optimization:

- Sellers can maximize their earnings by leveraging real-time price adjustments based on market conditions.

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IV. Challenges and Considerations

1. Complexity:

- Implementing a robust dynamic pricing mechanism requires sophisticated algorithms and access to high-quality data.

2. Transparency:

- Users may be sceptical of algorithmic pricing if the process is not transparent. Platforms must ensure that the pricing logic is explainable and fair.

3. Market Volatility:

- The highly volatile nature of cryptocurrency markets can make it challenging to predict prices accurately.

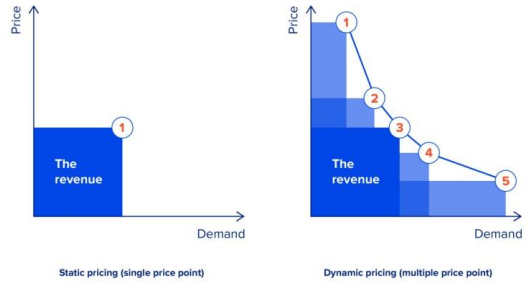
4. Ethical Concerns:

- Dynamic pricing could lead to perceived inequities, such as sudden price surges that exclude certain buyers.

V. Examples of Dynamic Pricing in NFT Platforms

1. TreasureNFT:

- TreasureNFT uses a dynamic pricing mechanism that incorporates machine learning to analyses market trends and adjust prices in real-time.



B. Fraud Detection and Prevention

Fraud detection and prevention are critical components of any NFT (Non-Fungible Token) trading platform, including TreasureNFT. Given the decentralized and pseudonymous nature of blockchain technology, NFT marketplaces are particularly vulnerable to fraudulent activities such as counterfeit NFTs, wash trading, phishing attacks, and price manipulation. TreasureNFT employs a multi-layered approach to detect and prevent fraud, leveraging advanced algorithms, cryptographic techniques, and community-driven governance. Below is a detailed explanation of the fraud detection and prevention techniques used in the TreasureNFT system.

1. Anomaly Detection Algorithms

TreasureNFT utilizes machine learning-based anomaly detection algorithms to identify suspicious activities on the platform. These algorithms analyses transaction patterns, user behaviour, and market trends to flag potential fraud.

Key Features:
Fraud detection and prevention are critical components of any NFT (Non-Fungible Token) trading platform, including TreasureNFT. Given the decentralized and pseudonymous nature of blockchain technology, NFT marketplaces are particularly vulnerable to fraudulent activities such as counterfeit NFTs, wash trading, phishing attacks, and price manipulation. TreasureNFT employs a multi-layered approach to detect and prevent fraud, leveraging advanced algorithms, cryptographic techniques, and community-driven governance. Below is a detailed explanation of the fraud detection and prevention techniques used in the TreasureNFT system.

1. Anomaly Detection Algorithms
TreasureNFT utilizes machine learning-based anomaly detection algorithms to identify suspicious activities on the platform. These algorithms analyses transaction patterns, user behaviour, and market trends to flag potential fraud.

Key Features:

Behavioural Analysis: The system monitors user activities, such as bidding patterns, transaction frequency, and wallet interactions, to detect deviations from normal behaviour.

Transaction Pattern Recognition: Unusual transaction patterns, such as rapid buying and selling of the same NFT (wash trading), are flagged for further investigation.

Real-Time Monitoring: The algorithms operate in real-time, enabling immediate detection and response to fraudulent activities.

2. NFT Authenticity Verification

To prevent the listing and sale of counterfeit NFTs, TreasureNFT implements a robust authenticity verification system.

Key Features:

Metadata Validation: The system verifies the metadata of each NFT, ensuring that it matches the original smart contract and creator's specifications.

Digital Signatures: Creators can digitally sign their NFTs, providing a verifiable proof of authenticity.

On-Chain Provenance: TreasureNFT tracks the ownership history of each NFT on the blockchain, ensuring that only legitimate NFTs are traded on the platform.

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3. Wash Trading Detection
Wash trading, where a user artificially inflates the value of an NFT by buying and selling it to themselves, is a common form of fraud in NFT marketplaces. TreasureNFT employs advanced techniques to detect and prevent this practice.

Key Features:
Wallet Address Analysis: The system identifies transactions between wallets controlled by the same entity, flagging them as potential wash trades.
Price Manipulation Detection: Sudden and unnatural price spikes are analyzed to determine if they are the result of wash trading.
Reputation Scoring: Users involved in suspicious activities are assigned lower reputation scores, limiting their ability to manipulate the market.

4. Phishing and Scam Prevention
Phishing attacks and scams are significant threats to NFT platforms. TreasureNFT implements several measures to protect users from these risks.

Key Features:
Smart Contract Audits: All smart contracts used on the platform are audited for vulnerabilities and malicious code.
User Education: TreasureNFT provides educational resources to help users recognize and avoid phishing attempts.
Two-Factor Authentication (2FA): Users are encouraged to enable 2FA to secure their accounts.
Whitelisting: The platform maintains a whitelist of verified creators and collections, reducing the risk of scams.

5. Decentralized Governance and Community Reporting
TreasureNFT leverages its decentralized governance model to involve the community in fraud detection and prevention.

Key Features:
Community Reporting: Users can report suspicious activities or fraudulent listings, which are then reviewed by the platform's moderation team.
Voting Mechanisms: The community can vote on proposed changes to fraud prevention policies, ensuring a transparent and democratic process.
Incentivized Vigilance: Users who contribute to fraud detection efforts may be rewarded with platform tokens or other incentives.

6. Cryptographic Security Measures
TreasureNFT employs cryptographic techniques to ensure the integrity and security of transactions.

Key Features:
End-to-End Encryption: All data transmitted on the platform is encrypted to prevent interception and tampering.
Hash Verification: Each NFT's metadata and transaction history are hashed and stored on the blockchain, making it tamper-proof.
Multi-Signature Wallets: High-value transactions may require multiple signatures, reducing the risk of unauthorized transfers.

7. AI-Powered Risk Assessment
TreasureNFT uses AI-powered risk assessment models to evaluate the likelihood of fraud for each transaction.

Key Features:
Risk Scoring: Each transaction is assigned a risk score based on factors such as user reputation, transaction history, and NFT authenticity.
Automated Alerts: High-risk transactions trigger automated alerts for further review by the platform's security team.
Adaptive Learning: The AI models continuously learn from new data, improving their accuracy over time.

8. Legal and Compliance Measures
TreasureNFT collaborates with legal and regulatory authorities to ensure compliance with anti-fraud laws and regulations.

Key Features:
KYC/AML Integration: Users may be required to complete Know Your Customer (KYC) and Anti-Money Laundering (AML) checks to access certain features.
Regulatory Reporting: The platform reports suspicious activities to relevant authorities, helping to combat fraud at a broader level.
Case Study: Fraud Prevention in Action
Scenario:
A user attempts to list a counterfeit NFT on TreasureNFT. The system detects inconsistencies in the NFT's metadata and flags it for review. Simultaneously, the anomaly detection algorithm identifies unusual bidding patterns associated with the user's wallet. The NFT is removed from the marketplace, and the user's account is temporarily suspended pending further investigation.

Outcome:
- The counterfeit NFT is prevented from being sold.
- The user is required to complete additional verification steps to regain access to their account.
- The community is notified of the incident, raising awareness about the importance of authenticity verification.

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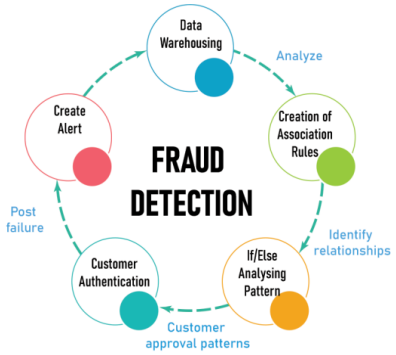


C. Decentralized Governance

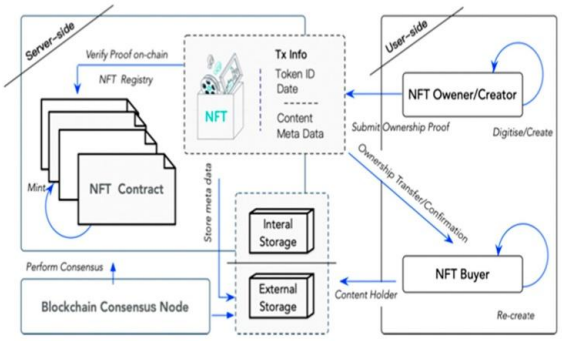
TreasureNFT's decentralized governance model empowers users to participate in decision-making processes through a consensus-based voting system. The algorithm system facilitates transparent and secure voting, ensuring that the platform evolves in accordance with the community's interests. This approach promotes trust and accountability, fostering a collaborative ecosystem.

Decentralized governance in the NFT (Non-Fungible Token) marketplace is an evolving concept that leverages blockchain technology to create more transparent, community-driven, and equitable systems for managing digital assets. Here are some of the latest technologies and trends in decentralized governance within the NFT space:

1. DAO (Decentralized Autonomous Organizations)

What it is: DAOs are blockchain-based organizations governed by smart contracts and community voting. In the NFT space, DAOs allow stakeholders (e.g., NFT holders, creators, and collectors) to participate in decision-making processes.

How it works: NFT holders can vote on proposals such as platform upgrades, revenue sharing, or new feature implementations. Voting power is often proportional to the number of NFTs or governance tokens held.



Examples:

Yuga Labs (creators of Bored Ape Yacht Club) has explored DAO structures for community governance.

Flamingo DAO is an NFT-focused DAO that collectively invests in and manages NFT assets.

2. Governance Tokens

What it is: Governance tokens are cryptocurrencies that grant holders voting rights in a decentralized platform. In NFT marketplaces, these tokens can be used to influence decisions about platform policies, fees, and feature development.

How it works: Users earn or purchase governance tokens, which they can stake or use to vote on proposals. This ensures that the platform evolves according to the community's needs.

Examples:

LooksRare: A decentralized NFT marketplace that rewards users with LOOKS tokens for participating in governance.

SuperRare: Introduced a governance token ($RARE) to decentralize decision-making and give the community control over the platform's future.

3. Smart Contract-Based Voting

What it is: Smart contracts automate voting processes, ensuring transparency and immutability. They are used to execute governance decisions without the need for intermediaries.

How it works: Proposals are submitted on-chain, and votes are cast using governance tokens or NFTs. Once a proposal reaches a quorum or majority, the smart contract automatically implements the decision.

Examples:

Snapshot: A popular off-chain voting tool used by many NFT projects to facilitate gas-free governance.

Aragon: A platform for creating and managing DAOs with built-in smart contract-based voting mechanisms.

4. Fractionalized NFT Ownership

What it is: Fractionalization allows multiple users to own a share of an NFT, enabling collective decision-making and governance over high-value assets.

How it works: An NFT is divided into smaller fractions (represented by tokens), and each fraction holder has a say in how the NFT is managed or utilized.

Examples:

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Fractional. Art: A platform that allows users to fractionalize NFTs and participate in governance based on their ownership stake.
PleasrDAO: A collective that purchases and governs high-value NFTs through fractional ownership.

Two/Multi-FactorAuthentication(2FA/MFA)

This authentication ensures the identity of the digital user by requesting at least twopiecesofevidencethattheindividualiswhotheyclaimtobe.Thefactorsmust be categorically different from each other, but must be something they own, possess, or know.Using these factors when logging into an online account helps ensure that the user's information will be protected, and even if one factor is compromised, the chance ofanotherbeingcompromisedislow.
Inadditiontoapassword,thesecondfactorcanbe anything such as a security code sent to the user's phone via SMS, voice, email, or biometric verification of your thumb or even face ID from the phone.

These standard features are available on many cryptocurrencies' exchanges and NFT platforms as of now as they revolve around buying and selling as well as storing digital assets. In the past, authentication methods were not required and were only optional. InMarch2021,NiftyGatewayuseraccountswerecompromisedandindicatingthat the accounts which were compromised did not use two-factor authentication. Many NFT marketplaces recommend Google Authenticator and Authy as reliable applications for securing platform login authentication.
NFT is mainly intended to capture and claim ownership of digital assets, which areeasy to access. Nonetheless, digital collectibles may also be the first sign of NFT vulnerabilities since they provide easy access to criminals. Due to the fact that cryptocurrencies lack a physicalform,they'redifficulttotracewhenconvertedfromcashintodigitalassets;also, as there is no physical form of cryptocurrency, laundering money is much easier in recent cases. Money laundering opportunities are increasing, and a BBC report said that crypto money laundering had risen to 20% in 2022. A major problem is that there is no centralized authority or regulator to oversee this. Likewise, NFTs are anonymous transactions, and while some exchanges may require KYC (know your customer) verification, there aremanyothersthatdonot.ThesameappliestotheNFTM.Althoughaninvestigation was conducted when an account was created, no KYC, nor AML (anti-money laundering) measures have been implemented by the NFTM.

Treasure NFT registration

The Financial Transactions and Reports Analysis Centre of Canada (FINTRAC) has granted TreasureNFT, the first algorithm-based comprehensive NFT trading platform in the world, a Money Services Business (MSB) licence.
MSB Link: https://www.fincen.gov/msb-registrant-search Number:31000224122206

Recent view of Indian government about decentralized system.

The Indian government has recognized the growing importance of Web 3.0, blockchain technology, and the rapidly expanding Non-Fungible Token (NFT) sector. These technologies, driven by decentralization, promise significant advancements in the way we interact with digital assets, cryptocurrencies, and financial services globally. However, with the rise of these new technologies, there are pressing concerns about security, legal frameworks, and ensuring that individuals' personal information and assets are protected.

Legal Landscape of NFTs, Web 3.0, and Blockchain in India.

The term "NFT" refers to "non-fungible tokens," which are essentially digital assets or asset-backed tokens that have distinct identifying codes and metadata stored in a blockchain ledger that prove the legitimacy and ownership of a corresponding unique tangible or intangible asset. As the name implies, NFTs are distinguished by their non-fungible nature.
Fungibility, as used in economics, is the capacity of an item to be traded for other individual assets of the same kind in order to transact value. In other words, fungible assets with the same denomination are implied to have the same worth. By definition, however, NFTs are not unique, interchangeable, or irreplaceable.

Referral Program

TreasureNFT official referral bonus of $18 will be automatically issued to your NFT wallet after you meet the conditions ($100)
TreasureNFT official referral bonus of $30 will be automatically issued to your NFT wallet after you meet the conditions ($150)
TreasureNFT official referral bonus of $40 will be automatically issued to your NFT wallet after you meet the conditions ($200)

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TreasureNFT official referral bonus of $50 will be automatically issued to your NFT wallet after you meet the conditions ($300)

New Event

With the rapid development of the internet, esports culture has gradually taken shape and matured, becoming a significant symbol of the new generation's lifestyle.

Today, **TreasureNFT is proud to announce our full sponsorship and support for the Super LEAGUE-INDIA youth esports tournament in India!** Through this initiative, we aim to show our commitment to the dreams and aspirations of young esports enthusiasts.

The future belongs to Web3 and to the younger generation. **One team, one dream**—let's stay **brave, positive, and optimistic** as we build an exciting future together!

Trendingnews of TreasureNFT

TreasureNFT is currently trending due to mixed reports about its legitimacy. While it offers an AI-powered algorithmic trading model and a dual earnings mechanism for trading rewards and referrals, there are alarming claims that it may be a scam, leaving some investors stranded. Additionally, there are community efforts, such as meetups, to educate users on how to utilize the platform effectively. As always, it's crucial to perform thorough research and verify information before investing.

How To Deposit and Withdraw on Treasure NFT

Depositing and withdrawing funds on the Treasure NFT platform is relatively straightforward. The process varies depending on the cryptocurrency used, but here is a general guide:

1. **Deposit:**
2. **Withdraw:**

Always ensure you're using a secure wallet and double-check all addresses before initiating any transaction to prevent loss of funds.

Treasure NFT Login

To get started on Treasure NFT, you need to **log in** to your account on the platform. Here's how to do it:

1. Visit the official Treasure NFT website.
2. On the homepage, look for the **Login** button, usually located at the top right.
3. Enter your **username** and **password** if you already have an account. Alternatively, you can use your **crypto wallet** (such as Meta Mask) to sign in.
4. Once logged in, you'll have access to your account dashboard where you can buy, sell, and explore NFTs.

If you don't have an account, you can create one by signing up with an email address and setting up a secure password, or simply connecting a crypto wallet to the platform.

Treasure NFT Marketplace

The **Treasure NFT marketplace** is where users can browse, buy, sell, and auction off NFTs. The marketplace is designed to offer a wide range of digital assets, from artwork to in-game items and collectibles. As with any NFT marketplace, transactions are conducted using cryptocurrency, and NFTs are stored in the buyer's wallet.

Key features of the Treasure NFT marketplace include:

- **Search Filters**: Users can sort through different categories of NFTs based on price, rarity, and more.
- **Auction System**: Many NFTs are listed for auction, providing a competitive environment where buyers can bid on the assets.
- **Community Interaction**: Some NFT marketplaces, including Treasure, allow for community interaction, enabling buyers and sellers to communicate directly or through forums.

The marketplace is an essential feature of the Treasure NFT ecosystem, allowing users to easily access and exchange digital treasures.

Conclusion:

The first all-inclusive NFT trading platform in the world, which uses price algorithm trading to provide liquidity for every NFT and drive a consistent price increase. In addition to sharing the benefits of the NFT era with all contributors and participants, TreasureNFT has the guts to innovate and establish industry standards. The platform is appropriate for long-term development and complies with the law. NFTs and Web 3.0 Security and Legal Limitations

in India: Treasure NFT's Road to Decentralised Innovation.

The fast-rising Non-Fungible Token (NFT) industry, Web 3.0, and blockchain technology have all gained recognition from the Indian government. These decentralised technologies have great promise for improving how we engage with digital assets, cryptocurrencies, and financial services around the world.

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