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FACILITATING NFT CUSTOMIZATION: OVERVIEW OF TOOLS ENABLING NON-PROGRAMMERS TO ENGAGE IN THE DIGITAL ASSET SPACE

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Abstract: *The meteoric rise of non-fungible tokens (NFTs) has marked a significant evolution in digital ownership and the monetization of digital assets, catalyzed by the blockchain technology. Initially confined to a niche audience of developers due to the technical complexities involved in their creation, NFTs have gradually become more accessible thanks to the advent of no-code platforms. These platforms have simplified the process of creating NFTs by providing user-friendly interfaces for NFT configuration. This way individuals without programming skills can participate as well in the digital economy. Despite extensive research on various facets of NFTs, there remains a notable gap in the literature regarding the tools that facilitate NFT configuration, particularly for non-programmers. This study aims to address this gap by providing an analysis and categorization of NFT configuration tools based on the degree of configurability they offer. This classification not only highlights the varying degrees of technical engagement required by different tools but also sets the stage for discussing the need for more accessible, user-friendly solutions in the NFT configuration space.*

Key Words: ***Blockchain, NFT, Customization, Configuration, Usability***

1. INTRODUCTION

Non-fungible tokens (NFTs), developed first in 2014, represent unique digital assets verified using blockchain technology, ensuring their uniqueness and ownership. NFTs did not capture significant public or academic interest until the launch of CryptoKitties in 2017, a blockchain-based game on the Ethereum network that illustrated the practical application of NFTs in digital gaming (Taherdoost, 2022). This game remained a singular mainstream application of NFTs until the broader market expansion in July 2020. The field gained substantial academic and economic attention in March 2021, highlighted by the sale of an NFT by the digital artist Beeple for 69.3 million dollars at a Christie's auction, marking a significant milestone in digital art valuation (Nadini et al., 2021).

This prompts an important inquiry: What precisely constitutes an NFT? An NFT is a digital certificate of ownership that serves as proof of a digital asset's uniqueness and non-interchangeability (Nadini et al., 2021). It is stored on a blockchain and offers indisputable answers to questions about ownership, creation, and authenticity. NFTs can be associated with various types of digital objects, including photos, videos, and audio. They are now being used to commodify digital objects in various contexts, such as art, gaming, and sports collectibles. While originally part of the Ethereum blockchain, more and more blockchains are now implementing their own versions of NFTs (Nadini et al., 2021).

Initially, the creation of NFTs required substantial technical expertise, with developers needing to write and deploy smart contracts on blockchain platforms like Ethereum (Creighton, 2022). This developer-centric approach made it challenging for artists and creators without programming skills to enter the NFT space. As the NFT market grew, there was a clear need for more accessible tools that could engage a broader audience (NoCodePanda, 2024).

In response to this demand, the industry witnessed the advent of no-code platforms that significantly streamline the creation and management of NFTs. These platforms enable users to craft NFTs through the configuration of smart contracts via intuitive user interfaces. This innovation eliminates the necessity for users to engage directly with the smart contracts or to possess an understanding of the underlying blockchain technology (NoCodePanda, 2024).

Despite the extensive literature available on various aspects of NFTs, a gap appears to exist concerning the available tools that facilitate NFT configuration. Our study aims to address this deficiency by providing a brief review of these tools, analyzing their features, and categorizing them according to the degree of NFT customization they offer. Furthermore, this paper

includes a brief analysis of the user interfaces of the NFT configurators. This will not only help in comprehending the current state of NFT configuration tools but also assist potential users in selecting the appropriate tools to effectively engage with the NFT market.

The paper is organised as follows: Section 2 brings theoretical background on blockchain and NFT technology. Overview and categorization of NFT configurators is given in Section 3. Finally, we discuss our findings and conclude in Section 4.

2. BACKGROUND

This section provides an introduction to blockchain technology, the foundational technology behind non-fungible tokens (NFTs). We will first delve into what blockchain is and how it operates, setting the stage to explore what NFTs are and how they utilize blockchain technology to function uniquely in the digital landscape.

2.1. Blockchain technology

A blockchain is a distributed digital ledger of transactions across a network of computers, functioning without a central authority (Rehman et al., 2021). The fundamental component of a blockchain is a block. Each blockchain maintains a record of transaction information, which is then stored within a block once it has been gathered. Whenever a block is filled with transactions, an encryption algorithm is utilized to process the block, producing a hexadecimal number known as a hash. The hash value of the previous block is then recorded in the header of the subsequent block and is secured together with other information in that block. This creates a chain of blocks linked together by a cryptographic chain (Kayikci & Khoshgoftaar, 2024; Hayes, 2024).

By distributing the ledger among multiple participants and employing consensus mechanisms, blockchain ensures that any change in data requires the agreement of the majority, making it extremely challenging for any single entity to manipulate or compromise the information stored on the blockchain. This approach enhances transparency, security, and integrity by making the system resistant to manipulation and providing a reliable source of truth (Kayikci & Khoshgoftaar, 2024). As a result, one of the primary applications of blockchain technology is the identification, registration, distribution, transfer, and tracking of digital assets. Bitcoin, the first cryptocurrency to use blockchain technology, was introduced in 2008 and launched in 2009. The financial industry has since become the primary user of blockchain due to the need for accurate ownership verification (Rehman et al., 2021).

2.2. Non-fungible tokens (NFT)

Non-fungible tokens, often abbreviated as NFTs, are tradeable digital assets based on blockchain technology (Chalmers et al., 2022). NFTs serve as a representation of various forms of intellectual property, including digital or physical creative works such as music, art, games, animated images, video clips, and etc. (Rehman et al., 2021).

NFTs can be bought or traded like other cryptocurrencies, such as Bitcoin, through various online marketplaces. However, unlike Bitcoin, which is a fungible asset (one Bitcoin is equal to any other Bitcoin), NFTs are non-fungible, meaning that their value is determined by their individual characteristics. While cryptocurrencies are generally fungible from a financial perspective, meaning that they can be exchanged one for another, NFTs shift the paradigm by making each token unique and irreplaceable. This makes it impossible for one non-fungible token to be equal to another. They are digital representations of assets and have been compared to digital passports because each token contains a unique, non-transferable identity that distinguishes it from other tokens (Sharma, 2024; Chalmers et al., 2022b).

NFTs are created through a process known as minting, which involves encrypting and recording the asset's information on a blockchain. To put it simply, minting entails the creation of a new block, validation of the NFT information by a validator, and closure of the block. The minting process typically involves the use of smart contracts that assign ownership and facilitate NFT transfers (Sharma, 2024).

When tokens are minted, they are given a unique identifier that is directly linked to a single blockchain address. Each token has a designated owner, and the ownership information (including the address in which the token is stored) is publicly accessible. Even when multiple NFTs of the same item are minted (akin to general admission tickets for a movie), each token possesses a unique identifier and can be distinguished from the others (Sharma, 2024).

3. TOOLS FOR NFT CONFIGURATION

The process of creating an NFT typically entails developing a smart contract on a blockchain platform such as Ethereum, which supports the ERC-721 or ERC-1155 token standards commonly used for NFTs. These smart contracts encode the rules governing the NFT's creation, transfer, and any other interactions (Parham & Breitinger, 2022; Sakız & Gencer, 2021). The unique information of an NFT, such as its metadata, is stored within the smart contract and can include details like associated images, descriptions, and attributes (Shah et al., 2023). These contracts are usually written in programming languages, like Solidity, which is specifically designed for the Ethereum network (Ahubele & Okolai, 2022).

However, as the popularity of NFTs increased, various platforms and services emerged to simplify the process of creating and minting NFTs, enabling artists and creators to participate in the space without requiring direct coding experience (Raman & Raj, 2021). These user-friendly platforms provide templates and interfaces that facilitate the NFT creation process, making it accessible to individuals who may not have a technical background. Basically, they offer the capability to configure ERC-721 or ERC-1155 smart contracts, while the degree of customization available to the user varies among these platforms. Each of these tools offers a distinct set of configuration options that cater to various requirements within the NFT industry, ranging from

artists aiming to monetize digital art without extensive technical knowledge to game developers seeking to incorporate unique digital assets into their products.

The following section provides a concise summary of several free tools, available online, that are suitable for configuring NFTs. These tools have been chosen from the most commonly utilized and accessible options that were identified through our search results on Google. We have categorized these tools based on the degree of configuration they provide to the user. The following categories are: *basic*, *advanced*, and *complex* NFT configuration.

3.1. Basic NFT Configuration

OpenSea (OpenSea, n.d.), Zora (ZORA, n.d.) and Rarible (Rarible, n.d.) are essential platforms for those new to NFTs, offering straightforward tools for creating, buying, and selling digital assets. As basic NFT configurators, they provide user-friendly interfaces that simplify the minting process for beginners. Beyond creation, each platform also features a comprehensive marketplace, allowing users to trade and explore a wide range of digital collectibles. This combination makes them accessible and practical entry points for anyone looking to engage with the world of NFTs.

OpenSea is a prominent NFT marketplace that enables users to buy, sell, create, and trade NFTs. With over three million active users and daily trading volume of around 4.5 million dollars as of January 2024, it is the largest NFT trading platform. Prior to its establishment in 2017, there was no simple way for users to trade various NFTs. OpenSea serves as a hub for thousands of creators, traders, and buyers to connect. On the OpenSea listing page, users can purchase, sell, or create art, collectibles, real estate, in-game, and sports assets (Amure, 2024).

Rarible is a platform that operates on the Ethereum blockchain and allows users to buy, sell, and create unique digital artworks using NFTs. The platform is built on the open-source Rarible Protocol, which is a community-governed NFT protocol that supports multiple chains. In 2021, Rarible introduced its own ERC-20 governance token called RARI, which gives holders the power to affect the platform's development. RARI token holders can propose and vote on changes to trading fees and platform features, act as community moderators, and curate artwork on the platform (Cryptopedia Staff, 2023).

Zora is a decentralized NFT platform that operates on a creator-centric model, allowing users to buy, sell, and create NFTs without the need for permission. It is designed as a Web3 social media platform, with a focus on enabling creators to receive royalties on their work. By collecting fees on resales, Zora aims to help artists and designers capture a share of the resale value of their NFTs. Additionally, the platform provides exposure for creators and helps them build communities through features such as auction houses and collectives (Sankrit, 2024).

When it comes to creating NFTs OpenSea, Rarible and Zora offer basic NFT configuration options. We have organized these options into the following categories: *collection*, *token* and *listing* configuration. In each category, we enlisted the configuration options that are common to the aforementioned tools.

1) *Collection configuration:* Before minting a token, users typically need to establish a collection. This process involves specifying various details of the collection, which will then be linked to the token. During this setup, users can customize the following details:
   - image,
   - name,
   - symbol, and
   - description.

2) *Token configuration:* When creating a token, users must define essential details such as its attributes, metadata, and linkage to a specific collection. This process ensures that each token is uniquely identified and properly categorized within the broader NFT ecosystem. Options that are available for users to customize are:
   - digital asset (PNG, GIF, WEBP, MP4, MP3, etc.),
   - name,
   - description,
   - properties,
   - alternative text for NFT, and
   - supply.

3) *Listing configuration:* Before listing a token on the marketplace, creators need to configure essential details regarding the financial terms of the token's sale. These configuration options include:
   - royalties,
   - price, and
   - date of listing expiration.

As an example of a user interface of a basic NFT configurator, the image in Figure 1 depicts the user interface of OpenSea. The interface is both user-friendly and technically sound, ensuring the secure minting of digital assets on a blockchain. With features like textboxes for entering metadata and a drag-and-drop area for uploading assets in various file formats, even individuals without programming skills can effortlessly configure their own NFTs without the need for smart contract programming knowledge.

3.2. Advanced NFT Configuration

Studio 721 (Studio 721, n.d.) provides a free tool for configuring, compiling, deploying, and verifying custom ERC-721 NFT smart contracts. It allows users to set basic configuration parameters, described in the previous subsection, as well as much more advanced configuration options. These advanced options include different minting options, setting token parameters, setting payout recipients, creating allowlists, and verifying contracts via Etherscan (Studio 721, n.d.).

The user interface of Studio 721 for configuring NFTs includes two panels, as illustrated in Figure 2. The left panel offers standard user interface elements such as textboxes and checkboxes for configuring NFTs, while the right panel displays a code editor with the NFT smart contract, enabling users to edit their NFTs more extensively. This design allows for a greater degree of

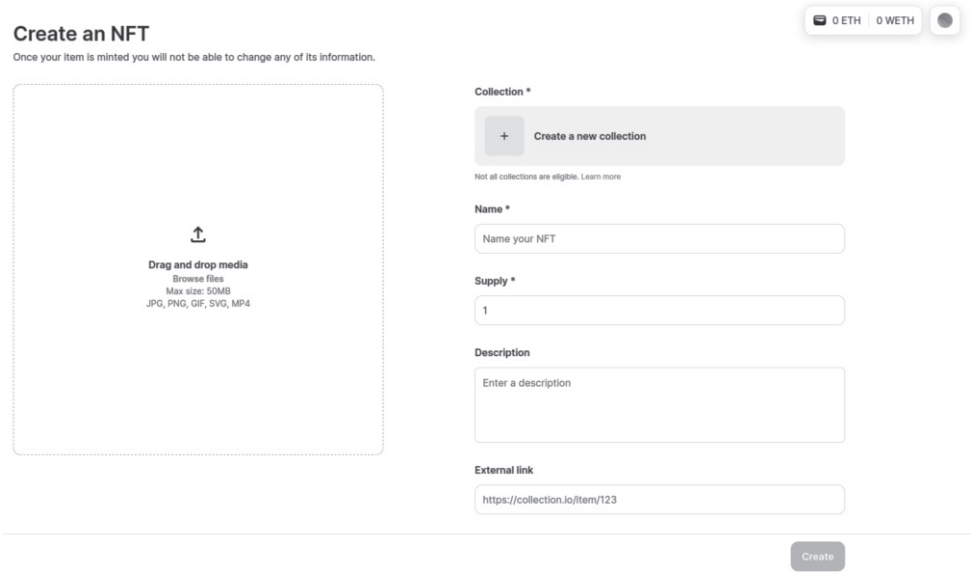

Fig. 1. OpenSea NFT configurator

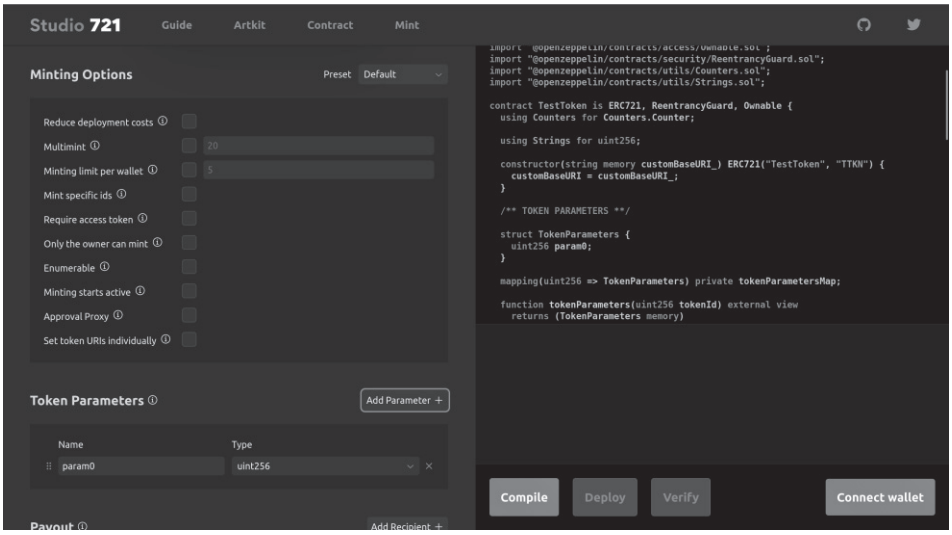

Fig. 2. Studio 721 configurator

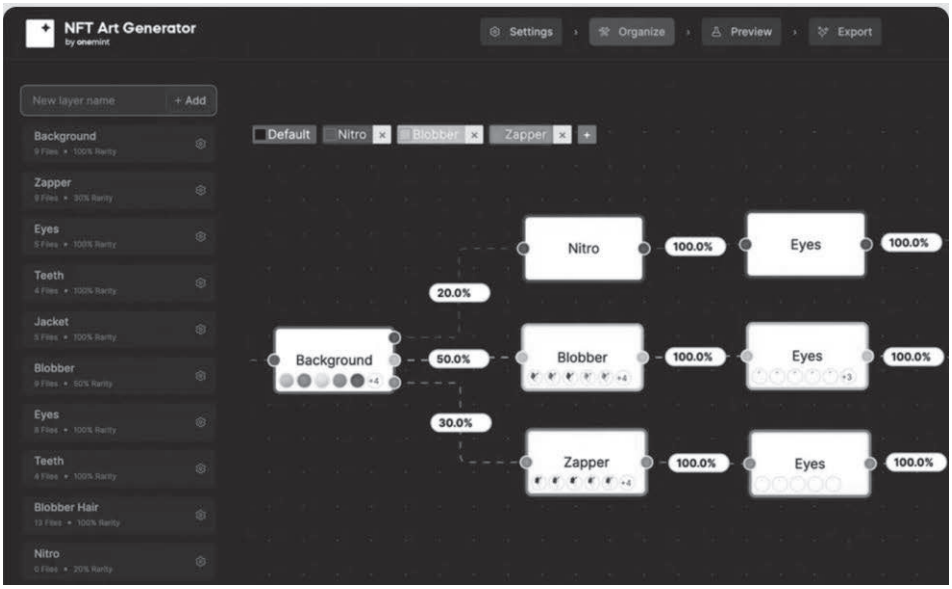

Fig. 3. Onemint’s NFT Art Generator

customization, as experienced users can add additional code and configurations that may not be initially provided by the user interface on the left side.

3.3. Complex NFT Configuration

NFT collection generators like Bueno (Bueno, n.d.), NFT Art Generator (NFT Art Generator, 2023), and Nifty Generator (Nifty Generator, n.d.) focus specifically on the creation and automated generation of NFTs, offering tools to customize and mint entire collections. They differ from other platforms because they facilitate the creation of NFTs with complex traits and rarity configurations.

Bueno is a toolkit designed for NFT creation without requiring any blockchain expertise. This no-code toolkit enables artists and creators to generate, mint, and launch NFT collections easily. Bueno's no-code art generator provides rarity control and supports multiple blockchains, including Ethereum, Polygon, and BASE. It also offers advanced features like customizable smart contracts with tailored minting rules, real-time collaboration, and interactive NFT experiences (Team, 2024).

Onemint's NFT Art Generator is a platform that allows users to generate, deploy, and mint NFT collections without the need for technical expertise or programming. This no-code NFT generator provides the capability to create unique NFTs with complex rarity and layer sorting algorithms. It also offers support for multiple blockchains, such as Ethereum, Polygon, Solana, and many other, making it a versatile option for users (Nifty Generator, n.d.).

Nifty Generator is a tool that allows artists to create NFT collections with metadata for Ethereum or Solana NFTs from their art layer files, with various traits, without having to write any code. This innovative tool was developed by Mycoverse, a team of builders and creatives who aim to enable more creatives to contribute to web3 without the need for a technical development team (Team, 2024).

Creating NFTs with complex traits and rarity configurations involves a detailed setup where each trait (like color, shape, accessories) has assigned rarity levels. The process of creating such collections is as follows:

1) *Asset Upload:* Creators upload base images and layers of traits to the NFT collection generator.
2) *Trait Configuration:* Each trait is categorized (e.g., background, skin, clothing) and assigned a rarity level, which determines how frequently it appears across the NFT collection.
3) *Rarity Calculation:* The platform uses these settings to calculate the overall rarity of each NFT generated, ensuring a mix of common and rare NFTs based on the creator's settings.
4) *Rarity Calculation:* The platform uses these settings to calculate the overall rarity of each NFT generated, ensuring a mix of common and rare NFTs based on the creator's settings.

As an example of a user interface for creating layered NFT collections, the image in Figure 3 illustrates the user interface of the NFT Art Generator platform. The interface arranges digital art elements into distinct layers, such as the Background, Eyes, and Jacket, each accompanied by corresponding files and predefined rarity percentages. These percentages indicate the probability of each trait appearing in the generated NFT, allowing for controlled variability in the artwork's appearance. The central part of the interface exhibits a schematic flowchart where nodes represent trait categories, and their interconnections determine potential combinations in the final NFTs. After the platform has generated the collection, users are granted the ability to refine and conclude their digital art projects.

This method allows creators to produce NFT collections that are not only unique but also adhere to a predetermined rarity schema, adding value and interest for collectors. NFT generators automate the combination and rarity configuration of these traits across potentially thousands of NFTs, streamlining the process significantly. This automation saves time and ensures consistency across a large collection, which is crucial for large-scale NFT projects.

4. CONCLUSION AND DISCUSSION

In this study, we explore a range of tools for NFT configuration, categorizing them based on the level of configurability they offer to users. Tools categorized as basic NFT configurators offer fundamental functionalities that lower the entry barrier for non-programmers and focus primarily on basic token and listing configurations. These tools are indeed sufficient for users looking to engage in straightforward NFT creation without delving into the complexities of blockchain technology. However, advanced NFT configurators provide further customization choices and are targeted at users who possess a more in-depth understanding of blockchain technology. The third category known as complex NFT configurators consists of specialized NFT collection generators. These tools cater to users seeking more depth in the customization of NFTs, allowing the development of NFT collections with complex traits and rarity configurations.

Advanced and complex NFT configurators provide greater flexibility and creative freedom, but they can also introduce a level of complexity that may be daunting for users without technical background looking to create a basic NFT. The challenge that confronts us is: How can we develop a tool that achieves an optimal balance between configurability and usability without compromising either aspect?

Adaptive user interfaces (Gullà et al., 2015) could be one way of bridging the gap between high configurability and user-friendly interfaces. These interfaces can dynamically adjust the complexity exposed to the user based on their proficiency and needs. For instance, a modular design that starts with basic configuration options and allows users to ”unlock” more advanced settings as they become more comfortable could help maintain usability while increasing configurability.

Furthermore, the introduction of AI-driven assistants (Yasar & Botelho, 2023) within these platforms could guide non-programmers through more complex configurations, suggesting optimization and explaining

advanced features in a contextual and digestible manner. Such enhancements would not only maintain the usability of these platforms but also empower a broader spectrum of users to fully exploit the potential of NFTs without sacrificing the depth of customization.

Although there are numerous ways of designing interfaces for NFT configurators, it is essential to observe real users interacting with these tools to provide a great user experience. By doing so, we can identify the challenges that users face. For example, we can determine their success rate in using the tools, the number of errors they make, and which tools from a variety they find the most user-friendly, along with the reasons behind their preferences. This type of usability evaluation is known as usability testing, and it is one of the techniques used to enhance the usability and user experience for individuals interacting with technology (What Is Usability Evaluation?, 2024). To the best of our knowledge, we have not come across any evaluations published in research papers for the aforementioned tools or for tools utilized in configuring NFTs in general. Therefore, in our opinion it is essential to perform these evaluations, so that the findings could be used to enhance the usability of already existing tools or for developing new tools with better usability.

In conclusion, although the current landscape of NFT configuration tools provides a solid foundation for non-programmers, there is a notable opportunity for them to evolve. Enhancing configurability without compromising usability will be key to expanding the accessibility and appeal of NFTs. Hence, as part one of our future research, we plan to create a prototype of an adaptive user interface for NFT configuration with an AI-driven assistant. Part two involves conducting a comprehensive usability testing of the created prototype on different groups of users. The results of usability testing can be used to further improve the user experience of NFT configuration tools.

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6. REFERENCES

Ahubele, B., & Okolai, B. (2022). A formal verification model for security Vulnerability in Non-Fungible Tokens (NFTS) platform. Advances in Multidisciplinary & Scientific Research Journal Publication, 10(1), 61–74. https://doi.org/10.22624/aims/maths/v10n1p7

Amure, T. O. (2024, January 7). What is OpenSea? Investopedia. Retrieved July 12, 2024, from https://www.investopedia.com/what-is-opensea-6362477

Bueno | No-Code Tools for NFT Creators. (n.d.). Bueno. Retrieved July 26, 2024, from https://bueno.art/

Chalmers, D., Fisch, C., Matthews, R., Quinn, W., & Recker, J. (2022). Beyond the bubble: Will NFTs and digital proof of ownership empower creative industry entrepreneurs? Journal of Business Venturing Insights, 17, e00309. https://doi.org/10.1016/j.jbvi.2022.e00309

Creighton, J. (2022, December 15). NFT Timeline: The beginnings and history of NFTs. Nftnow. Retrieved July 8, 2024, from https://nftnow.com/guides/nft-timeline-the-beginnings-and-history-of-nfts/

Cryptopedia Staff. (2023, October 10). Rarible NFT Marketplace: RARI Coin & NFT Crypto Art | Gemini. Gemini. Retrieved July 12, 2024, from https://www.gemini.com/cryptopedia/rarible-nft-art-marketplace-rari-coin

Gullà, F., Ceccacci, S., Germani, M., & Cavalieri, L. (2015). Design adaptable and adaptive user interfaces: a method to manage the information. In Biosystems & biorobotics (pp. 47–58). https://doi.org/10.1007/978-3-319-18374-9_5

Hayes, A. (2024, June 29). Blockchain Facts: What is it, how it works, and how it can be used. Investopedia. Retrieved July 10, 2024, from https://www.investopedia.com/terms/b/blockchain.asp

Kayikci, S., & Khoshgoftaar, T. M. (2024). Blockchain meets machine learning: a survey. Journal of Big Data, 11(1). https://doi.org/10.1186/s40537-023-00852-y

Nadini, M., Alessandretti, L., Di Giacinto, F., Martino, M., Aiello, L. M., & Baronchelli, A. (2021). Mapping the NFT revolution: market trends, trade networks, and visual features. Scientific Reports, 11(1). https://doi.org/10.1038/s41598-021-00053-8

NFT Art Generator - No-Code NFT maker for NFT creators. (2023, February 10). NFT Art Generator by Onemint. Retrieved July 26, 2024, from https://nft-generator.art/

Nifty Generator. (n.d.). Nifty Generator. Retrieved July 26, 2024, from https://www.niftygenerator.xyz/

NoCodePanda. (2024, April 18). Top 10 No-Code NFT Platforms | NoCodePanda. Retrieved July 8, 2024, from https://www.nocodepanda.com/top-10-nocode-nft-platforms

OpenSea. (n.d.). OpenSea. Retrieved July 12, 2024, from https://opensea.io/

Parham, A., & Breitinger, C. (2022). Non-fungible tokens: promise or peril? arXiv (Cornell University). https://doi.org/10.48550/arxiv.2202.06354

Raman, R., & Raj, B. E. (2021). The world of NFTs (Non-Fungible Tokens). In Advances in information security, privacy, and ethics book series (pp. 89–108). https://doi.org/10.4018/978-1-7998-5839-3.ch005

Rarible - NFT marketplace for brands, communities and traders. (n.d.). Rarible. Retrieved July 12, 2024, from https://rarible.com/

Rehman, W., Zainab, H. E., Imran, J., & Bawany, N. Z. (2021). NFTs: Applications and challenges. 2021 22nd International Arab Conference on Information Technology (ACIT). https://doi.org/10.1109/acit53391.2021.9677260

Sakız, B., & Gencer, A. H. (2021). Blockchain Beyond Cryptocurrency: Non-Fungible tokens. Uluslararası Avrasya Ekonomileri Konferansı. https://doi.org/10.36880/c13.02527

Sankrit, K. (2024, April 15). Unlocking Digital Creativity: Guide to Zora and Zora Network. CoinGecko. Retrieved July 26, 2024, from https://www.coingecko.com/learn/what-is-zora-and-zora-network-crypto

Shah, K., Khokhariya, U., & Patel, S. (2023). Smart contract-based Dynamic Non-Fungible Tokens Generation System. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-2796956/v1

Sharma, R. (2024, June 12). Non-Fungible Token (NFT): What it means and how it works. Investopedia. Retrieved July 10, 2024, from https://www.investopedia.com/non-fungible-tokens-nft-5115211

Studio 721. (n.d.). Studio 721. Retrieved July 26, 2024, from https://www.721.so/

Taherdoost, H. (2022). Non-Fungible Tokens (NFT): A Systematic review. Information, 14(1), 26. https://doi.org/10.3390/info14010026

Team, M. (2024, July 2). Bueno - No-Code NFT Creation. Retrieved July 26, 2024, from https://metla.com/blog/bueno-no-code-nft-creator

What is Usability Evaluation? (2024, June 11). The Interaction Design Foundation. Retrieved July 28, 2024, from https://www.interaction-design.org/literature/topics/usability-evaluation

Yasar, K., & Botelho, B. (2023, October 2). Virtual Assistant (AI Assistant). Customer Experience. Retrieved July 27, 2024, from https://www.techtarget.com/searchcustomerexperience/definition/virtual-assistant-AI-assistant

ZORA. (n.d.). ZORA. Retrieved July 12, 2024, from https://zora.co/

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