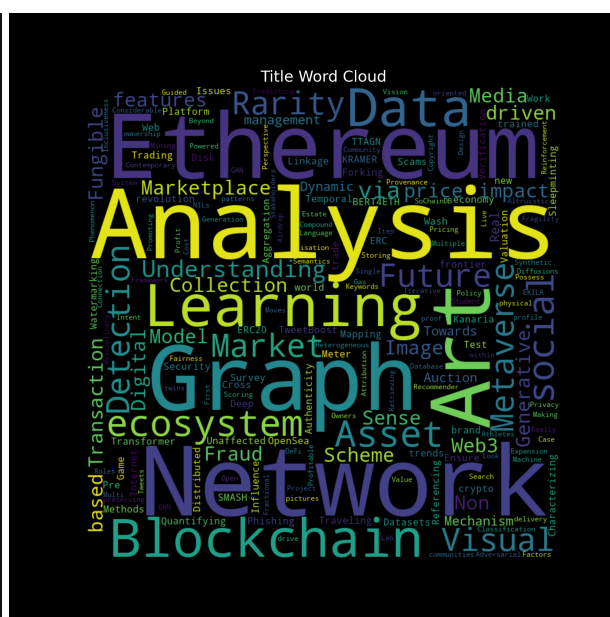
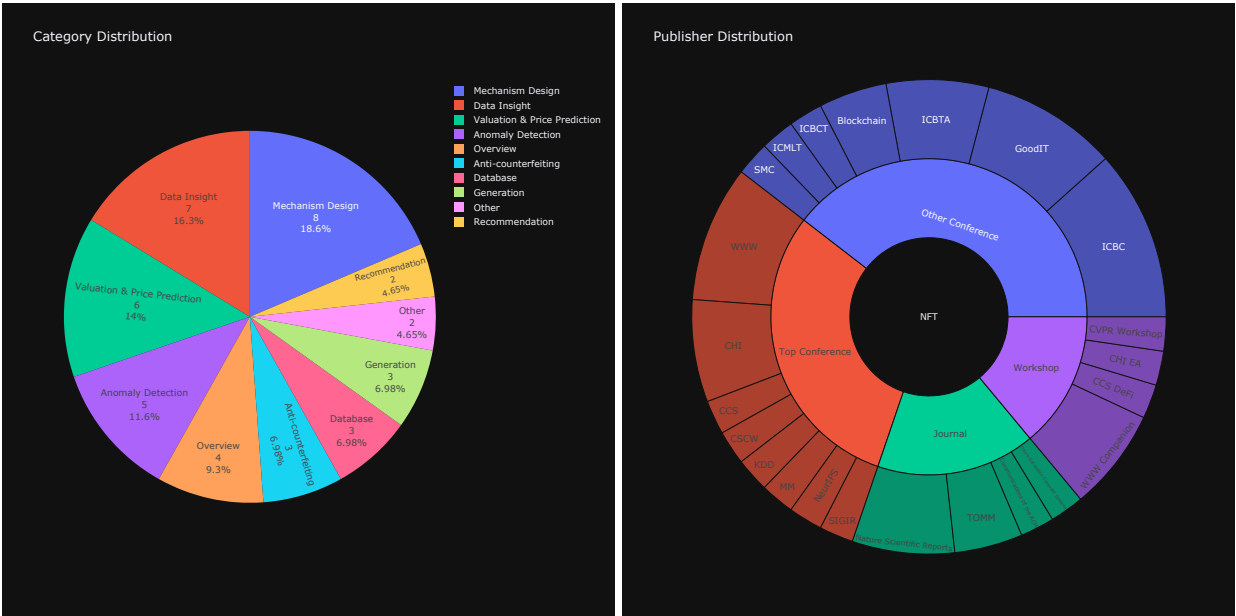


We collect papers related to data-driven analysis and application for non-fungible token (NFT) from top conferences, journals, and specialized domain-specific conferences. We then categorize them according to their specific tasks for better organization.

- NeurIPS, KDD, WWW, SIGIR, ...
- CHI, CSCW, CCS, ...
- CVPR, MM, TOMM, ...
- Nature Scientific Reports, ...

- ICBC - [IEEE International Conference on Blockchain and Cryptocurrency](#)
- Blockchain - [IEEE International Conference on Blockchain](#)
- ICBTA - [ACM International Conference on Blockchain Technology and Application](#)
- GoodIT - [ACM Conference on Information Technology for Social Good](#)





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Overview

1. Mapping the NFT revolution: market trends, trade networks, and visual features

Nadini, Matthieu and Alessandretti, Laura and Di Giacinto, Flavio and Martino, Mauro and Aiello, Luca Maria and Baronchelli, Andrea

Nature Scientific Reports, 2021. journal

2. Non-fungible tokens and the future of art

Kugler, Logan

Communications of the ACM, 2021. journal

3. Characterizing the OpenSea NFT Marketplace

White, Bryan and Mahanti, Aniket and Passi, Kalpdrum

WWW Companion, 2022. workshop

4. Web 3.0: The Future of Internet

*Gan, Wensheng and Ye, Zhenqiang and Wan, Shicheng and Yu, Philip S.*

WWW Companion, 2023. [workshop](#)

## Tasks

### Data Insight

#### 1. Traveling the token world: A graph analysis of Ethereum ERC20 token ecosystem

*Chen, Weili and Zhang, Tuo and Chen, Zhiguang and Zheng, Zibin and Lu, Yutong*

WWW, 2020. [conference](#)

#### 2. Networks of Ethereum Non-Fungible Tokens: A graph-based analysis of the ERC-721 ecosystem

*Casale-Brunet, S. and Ribeca, P. and Doyle, P. and Mattavelli, M.*

Blockchain, 2021. [conference](#)

#### 3. Quantifying NFT-driven networks in crypto art

*Vasan, Kishore and Janosov, Milán and Barabási, Albert-László*

Nature Scientific Reports, 2022. [journal](#)

#### 4. Graph Analysis of the Ethereum Blockchain Data: A Survey of Datasets, Methods, and Future Work

*Khan, Arijit*

Blockchain, 2022. [conference](#)

#### 5. The social impact of NFTs in the metaverse economy

*Guidi, Barbara and Michienzi, Andrea*

GoodIT, 2023. [conference](#)

#### 6. NFT SMASH: Game to Test Your NFT Rarity Sense

*Krasnoselskii, Mikhail and Madhwal, Yash and Stepin, Alexander and Yanovich, Yury*

ICBC, 2023. [conference](#)

#### 7. KRAMER: Kanaria NFT Collection Rarity Meter

*Krasnoselskii, Mikhail and Madhwal, Yash and Yanovich, Yury*

ICBC, 2023. [conference](#)

### Anomaly Detection

### 1. **TTAGN: Temporal Transaction Aggregation Graph Network for Ethereum Phishing Scams Detection**

*Li, Sijia and Gou, Gaopeng and Liu, Chang and Hou, Chengshang and Li, Zhenzhen and Xiong, Gang*  
WWW, 2022. [conference](#)

### 2. **Understanding Security Issues in the NFT Ecosystem**

*Das, Dipanjan and Bose, Priyanka and Ruaro, Nicola and Kruegel, Christopher and Vigna, Giovanni*  
CCS, 2022. [conference](#)

### 3. **Sleepminting, the brand new frontier of Non Fungible Tokens fraud**

*Guidi, Barbara and Michienzi, Andrea*  
GoodIT, 2022. [conference](#)

### 4. **NFTDisk: Visual Detection of Wash Trading in NFT Markets**

*Wen, Xiaolin and Wang, Yong and Yue, Xuanwu and Zhu, Feida and Zhu, Min*  
CHI, 2023. [conference](#)

### 5. **BERT4ETH: A Pre-trained Transformer for Ethereum Fraud Detection**

*Hu, Sihao and Zhang, Zhen and Luo, Bingqiao and Lu, Shengliang and He, Bingsheng and Liu, Ling*  
WWW, 2023. [conference](#), [code](#)

## Anti-counterfeiting

### 1. **A Distributed Authenticity Verification Scheme Using Deep Learning for NFT Market**

*Kimura, Keigo and Imamura, Mitsuyoshi and Omote, Kazumasa*  
ICBTA, 2022. [conference](#)

### 2. **NFT-Based Data Marketplace with Digital Watermarking**

*Ranjbar Alvar, Saeed and Akbari, Mohammad and Yue, David (Ming Xuan) and Zhang, Yong*  
KDD, 2023. [conference](#)

### 3. **Cross-Referencing Scheme to Ensure NFT and Platform Linkage Unaffected by Forking**

*Kimura, Keigo and Imamura, Mitsuyoshi and Omote, Kazumasa*  
ICBC, 2023. [conference](#)

## Valuation & Price Prediction

### 1. **TweetBoost: Influence of Social Media on NFT Valuation**

*Kapoor, Arnav and Guhathakurta, Dipanwita and Mathur, Mehul and Yadav, Rupanshu and Gupta, Manish and Kumaraguru, Ponnurangam*

WWW Companion, 2022. [workshop](#)

## 2. Heterogeneous rarity patterns drive price dynamics in NFT collections

*Mekacher, Amin and Bracci, Alberto and Nadini, Matthieu and Martino, Mauro and Alessandretti, Laura and Aiello, Luca Maria and Baronchelli, Andrea*

Nature Scientific Reports, 2022. [journal](#)

## 3. The impact of NFT profile pictures within social network communities

*Casale-Brunet, Simone and Zichichi, Mirko and Hutchinson, Lee and Mattavelli, Marco and Ferretti, Stefano*

GoodIT, 2022. [conference](#)

## 4. Analysis of Non-Fungible Token Pricing Factors with Machine Learning

*Ho, Kin-Hon and Hou, Yun and Chan, Tse-Tin and Pan, Haoyuan*

SMC, 2022. [conference](#)

## 5. Understanding NFT Price Moves through Tweets Keywords Analysis

*Luo, Junliang and Jia, Yongzheng and Liu, Xue*

GoodIT, 2023. [conference](#)

## 6. NFT Scoring: An Analysis of the Considerable Features

*Nourmohammadi, Reza and Arabian, Mahdi and Ghorbanpour, Masoumeh and Nazemi, Mohammad M. and Nezhadsistani, Nasim*

ICBTA, 2023. [conference](#)

## Recommendation

### 1. Predicting NFT Classification with GNN: A Recommender System for Web3 Assets

*Yu, Guangsheng and Wang, Qin and Altaf, Tanzeela and Wang, Xu and Xu, Xiwei and Chen, Shiping*

ICBC, 2023. [conference](#)

### 2. The Contemporary Art of Image Search: Iterative User Intent Expansion via Vision-Language Model

*Yilin Ye, Qian Zhu, Shishi Xiao, Kang Zhang, Wei Zeng*

CSCW, 2024. [conference](#)

## Generation

### 1. NFTGAN: Non-Fungible Token Art Generation Using Generative Adversarial Networks

*Shahriar, Sakib and Hayawi, Kadhim*

ICMLT, 2022. [conference](#)

### 2. Learning Profitable NFT Image Diffusions via Multiple Visual-Policy Guided Reinforcement Learning

*He, Huiguo and Wang, Tianfu and Yang, Huan and Fu, Jianlong and Yuan, Nicholas Jing and Yin, Jian and Chao, Hongyang and Zhang, Qi*

MM, 2023. [conference](#)

### 3. EKILA: Synthetic Media Provenance and Attribution for Generative Art

*Balan, Kar and Agarwal, Shruti and Jenni, Simon and Parsons, Andy and Gilbert, Andrew and Collomosse, John*

CVPR Workshop, 2023. [workshop](#)

## Mechanism Design

### 1. A Framework for Single-Item NFT Auction Mechanism Design

*Milionis, Jason and Hirsch, Dean and Ardit, Andy and Garimidi, Pranav*

CCS DeFi, 2022. [workshop](#)

### 2. Real Estate Tokenisation via Non Fungible Tokens

*Serrano, Will*

ICBCT, 2022. [conference](#)

### 3. Altruistic and Profit-oriented: Making Sense of Roles in Web3 Community from Airdrop Perspective

*Fan, Sizheng and Min, Tian and Wu, Xiao and Cai, Wei*

CHI, 2023. [conference](#)

### 4. Using NFTs for ownership management of digital twins and for proof of delivery of their physical assets

*Haya R. Hasan and Mohammad Madine and Ibrar Yaqoob and Khaled Salah and Raja Jayaraman and Dragan Boscovic*

Future Generation Computer Systems, 2023. [journal](#)

### 5. A Privacy-preserving Auction Mechanism for Learning Model as an NFT in Blockchain-Driven Metaverse

*Zhang, Qinnan and Xiong, Zehui and Zhu, Jianming and Gao, Sheng and Yang, Wanting*

TOMM, 2023. [journal](#)

**6. Do NFTs' Owners Really Possess their Assets? A First Look at the NFT-to-Asset Connection Fragility**

*Wang, Ziwei and Gao, Jiashi and Wei, Xuetao*

WWW, 2023. [conference](#)

**7. Gas Cost Analysis of Fractional NFT on the Ethereum Blockchain**

*Choi, Wonseok and Woo, Jongsoo and Hong, James Won-Ki*

ICBC, 2023. [conference](#)

**8. Semantics and Non-Fungible Tokens for Copyright Management on the Metaverse and Beyond**

*García, Roberto and Cediel, Ana and Teixidó, Mercè and Gil, Rosa*

TOMM, 2023. [journal](#)

## Database

**1. SoChainDB: A Database for Storing and Retrieving Blockchain-Powered Social Network Data**

*Nguyen, Hoang H. and Bozhkov, Dmytro and Ahmadi, Zahra and Nguyen, Nhat-Minh and Doan, Thanh-Nam*

SIGIR, 2022. [conference](#)

**2. Data Mining of Compound DeFi Project**

*Escamilla, Jesus Ariel Leon and Yanovich, Yury*

ICBTA, 2022. [conference](#)

**3. Live Graph Lab: Towards Open, Dynamic and Real Transaction Graphs with NFT**

*Zhen Zhang, Bingqiao Luo, Shengliang Lu, Bingsheng He*

NeurIPS, 2023. [conference](#)

## Other

**1. Stakeholders and Value in the NFT Ecosystem: Towards a Multi-disciplinary Understanding of the NFT Phenomenon**

*Baytaş, Aydin and Cappellaro, Amos and Fernaeus, Ylva*

CHI EA, 2022. [workshop](#)

**2. Promoting Inclusiveness and Fairness through NFTs: The Case of Student-Athletes and NILs**

*Carvalho, Arthur and Zavolokina, Liudmila and Bhunia, Suman and Chaudhary, Monu and Yoganathan, Nitharsan*

CHI, 2023. **conference**