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

If you use this dataset or file provided within this repository, please cite: *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****. arXiv preprint arXiv:2106.00647.*

Cite also the respective API used. For instance, if you use OpenSea data acknowledge them.

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Non-fungible-tokens dataset

Data are downloaded from different APIs, cleaned, and merged. They are stored in **Data_API.csv.gz**. Note that data provided by Nonfungible.com cannot be shared, so the dataset released here is slighly different from the one used in our article. Dataset is about the buyer-seller network only.

Explanation of the columns in the shared dataset is given below.

- *Unique_id_collection*: Unique ID for a given NFT
- *Price_Crypto*, *Crypto*, *Price_USD*: Conversion in USD is done with a daily resolution
- *Seller_address*, *Seller_username*, *Buyer_address*, *Buyer_username*: Addresses for sellers and buyers and (when available) their username used on the NFT marketplace
- *Image_url_1*, *Image_url_2*, *Image_url_3*, *Image_url_4*: Url to the digital object associate with the NFT. Given that urls may change over time, first try to download Image_url_1, then Image_url_2, and so on..
- *Datetime_updated*, *Datetime_updated_seconds*: It identifies the time of the transaction with either a day or second resolution
- *Smart_contract*: Smart contract of the given NFT
- *ID_token*: ID of the NFT asset within a given smart contract
- *Transaction_hash*: hash of the transaction involving a NFT sale
- *Collection*: It corresponds to the collection in which the NFT belongs to
- *Collection_cleaned*: It removes common mispellings in the field *Collection*. It also uses words in *Cleaning_collections.csv* to smooth the names. For instance, *Aavegotchi* renames all collections starting with that string in *Aavegotchi*. Some unnamed collections are here called *Miscellanea*
- *Market*: It is where data are downloaded from (so the API).
- *Name*: Title of the NFT listing
- *Description*: Description of the NFT listings
- *Permanent_link*: A link that allows to verify the NFT authenticity (valid only for the OpenSea Market)
- *Category*: Category in which the NFT belongs to. Examples are: Art, Games, and Collectible

Download data from single APIs

Only successfull sales are downloaded. Code is made to download a month at a time. Before starting to download the data, open and run the Jupyter notebook **Install_packages.ipynb**, where all Python3 libraries are installed. Then, if we would like to download all NFT sales on the OpenSea during April 2020, just open a Linux Terminal and type (it works similarly in Windows)

```
python API_Opensea.py 2020-04-01 2020-05-01
```

The code creates the folder *./Data_OpenSea/4_2020* and saves data there.

OpenSea market

Data downloaded from the API of OpenSea. File to download data **API_Opensea.py**.

Note: now using OpenSea API requires an API key. So this code won't run without adding your API key.

Atomic market

Data downloaded from the API of Atomic. File to download data **API_Atomic.py**.

Cryptokitties

Data downloaded from the TheGraph. File to download data **API_TheGraph_Cryptokitties.py**.

Godsunchained

Data downloaded from the TheGraph. File to download data **API_TheGraph_Godsunchained.py**.

Note: subgraph is not available as of 20/09/2021. It may become available again in the future

Decentraland

Data downloaded from the TheGraph. File to download data **API_TheGraph_Decentraland.py**.